Exhibit 5

Sensemaking in Organizations:

Taking Stock and Moving Forward

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Sensemaking is the process through which people work to understand issues or events that are novel, ambiguous, confusing, or in some other way violate expectations. As an activity central to organizing, sensemaking has been the subject of considerable research which has intensified over the last decade. We begin this review with a historical overview of the field, and develop a definition of sensemaking rooted in recurrent themes from the literature. We then review and integrate existing theory and research, focusing on two key bodies of work. The first explores how sensemaking is accomplished, unpacking the sensemaking process by examining how events become triggers for sensemaking, how intersubjective meaning is created, and the role of action in sensemaking. The second body considers how sensemaking enables the accomplishment of other key organizational processes, such organizational change, learning, and creativity and innovation. The final part of the chapter draws on areas

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of difference and debate highlighted throughout the review to discuss the
implications of key tensions in the sensemaking literature, and identifies
important theoretical and methodological opportunities for the field.

Sensemaking—the process through which individuals work to understand
novel, unexpected, or confusing events—has become a critically important
topic in the study of organizations. When organizational members encounter
moments of ambiguity or uncertainty, they seek to clarify what is going on by
extracting and interpreting cues from their environment, using these as the
basis for a plausible account that provides order and "makes sense" of what
has occurred, and through which they continue to enact the environment
(Brown, 2000; Maitlis, 2005; Weick, 1995; Weick, Sutcliffe, & Obstfeld,
2005). Sensemaking goes beyond interpretation[1] and involves the active
authoring of events and frameworks for understanding, as people play a role
in constructing the very situations they attempt to comprehend (Sutcliffe,
2013; Weick, 1995; Weick et al., 2005). Within the organizational literature,
there is a rapidly growing body of research on sensemaking, examining how
sense is made in organizations (Clark & Geppert, 2011; Cornelissen, 2012;
Hernes & Maitlis, 2010a; Monin, Noorderhaven, Vaara, & Kroon, 2013;
Navis & Glynn, 2011; Rudolph, Morrison, & Carroll, 2009; Sonenshein,
2007; Whiteman & Cooper, 2011), as well the impact of sensemaking on a
variety of key organizational processes, including strategic change and
decision-making (Gioia & Thomas, 1996; Rerup & Feldman, 2011; Sonenshein,
2010), innovation and creativity (Drazin, Glynn, & Kazanjian, 1999; Hill &
Levenhagen, 1995), and organizational learning (Christianson, Farkas, Sut-
cliffe, & Weick, 2009; Catino & Patriotta, 2013; Gephart, 1993; Weick, 1988,
1990, 1993). Sensemaking is thus a central activity in organizations, and one
that lies at the very core of organizing.

Since the publication of Weick's (1995) classic text, *Sensemaking in Organ-
izations*, empirical sensemaking research has burgeoned, conducted in varied
contexts, and in methodologically rigorous and diverse ways. Despite, or
perhaps because of, this extensive study, the literature on sensemaking has
become fragmented. While scholars mostly agree on what prompts sensemak-
ing, they diverge on several points, including what sensemaking encompasses,
how it is accomplished, its temporal orientation, and the degree to which it is
shared. For instance, some portray sensemaking as a more individual, cognitive
process (Klein, Moon, & Hoffman, 2006; Louis, 1980; Starbuck & Milliken,
1988), whereas others depict it as inherently social and discursive (Maitlis,
2005; Weick, 1995; Weick et al., 2005). Most writing casts sensemaking as ret-
rospective (Weick, 1995), but some believe it can also be a prospective process
(Gephart, Topal, & Zhang, 2010). Such variations in how sensemaking is con-
ceptualized are reflected in a range of definitions for sensemaking. In addition,

there is often little dialogue across streams of research that draw upon sense-making, despite common interests and questions. Resulting from these frequently unarticulated differences and disconnected conversations is confusion about the sensemaking literature and a lack of clarity about where future research on sensemaking should be directed.

This chapter is organized into the following sections. First, we build a foundation for our discussion of sensemaking: we provide a brief historical overview of the field, present and discuss various definitions of sensemaking (and sensemaking-related constructs), and develop the definition of sensemaking we will use in this chapter. Second, we take stock of the current sensemaking literature. We review and integrate existing theory and research, with a particular focus on empirical work over the last two decades, to identify important themes and findings in two key bodies of research. The first focuses on the process of sensemaking—that is, how sensemaking is accomplished—and the second, on other key organizational processes that are accomplished through sensemaking. Research on how sensemaking is accomplished highlights three main "sensemaking moves" related to noticing or perceiving cues, creating interpretations, and taking action (Daft & Weick, 1984; Rudolph et al., 2009; Thomas, Clark, & Gioia, 1993; Weber & Glynn, 2006). In keeping with this framework, we examine how sensemaking is accomplished by focusing on (1) how events become triggers for sensemaking, (2) how intersubjective meaning[2] is created, and (3) the role of action in sensemaking. To examine what organizational member sensemaking helps to accomplish, we explore sensemaking as an explanatory mechanism for other important organizational processes, such as strategic or organizational change (Gioia & Chittipeddi, 1991), learning (Christianson et al., 2009), and creativity and innovation (Drazin et al., 1999). Third, we look forward, highlighting the implications for research of key ontological differences in the sensemaking literature, and identifying several theoretical and methodological opportunities for the field.

Given the breadth and depth of the literature related to sensemaking, we begin by clarifying the limits of our review. Organizational life is full of moments of ambiguity and uncertainty and the notion of sensemaking has gained widespread traction not only in organizational behavior but also related literatures, such as organization communication (Christensen & Cornelissen, 2011; Taylor & Van Every, 2000), education (Coburn, 2001, 2005; Smerek, 2009), and health care (Anderson & McDaniel, 2000; Jordan et al., 2009). Sensemaking offers a useful theoretical construct for many types of scholars but, given this vast reach, we restrict our discussion in this chapter to the field of organizational studies. Furthermore, our primary focus is on sensemaking in organizations and so we draw most heavily upon research on collective sensemaking as it is carried out by multiple actors in organizations.

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In addition, we recognize but do not review the considerable body of organizational research that uses the notion of sensemaking broadly, often as synonymous with "trying to understand", "thinking about", or "socially constructing" issues or situations. While such work can valuably contribute to our understanding of a range of phenomena in organizations, the more colloquial use of the sensemaking term also confuses efforts to theorize sensemaking as a construct and to understand its forms and effects in organizations. We, therefore, bound our discussion here by focusing on research that uses a narrower definition of sensemaking, consistent with the one that we adopt in this chapter, and with the core sensemaking literature. Furthermore, our emphasis is on the Weickian perspective on sensemaking (1969, 1979, 1995), although we recognize, and later briefly discuss, the ethnomethodological approach to sensemaking (Garfinkel, 1967; Gephart, 1993).

Foundations for Discussion

History of Sensemaking

The roots of sensemaking in the organizational literature can be traced back to the beginning of the twentieth century (Dewey, 1922; James, 1890) but sensemaking did not begin to emerge as a distinct topic of study until the late 1960s (Garfinkel, 1967; Weick, 1969). In the more than 40 years since sensemaking entered the organizational literature, scholars have approached its study in various ways. Below, we provide a brief summary of themes by decade, highlighting key trends in sensemaking research.

Sensemaking language was introduced into the literature by scholars who study how meaning is constructed and transmitted. Garfinkel (1967) used the term "sense making" in his introduction of ethnomethodology as a way of studying the everyday practices of actors as they interact and interpret and account for their experience of reality. Polanyi (1967) also used related terms of "sensegiving" and "sense-reading" to describe how people endow speech with meaning and make sense of speech. The first published mention of sensemaking in the organizational context is in Weick's (1969) book, *The Social Psychology of Organizing*, during a discussion of the process through which ecological changes in the organizational environment create discontinuities or variations that engage the attention of organizational actors, prompting recursive cycles of enactment, selection, and retention, meant to reduce equivocality.

Various streams of research in the 1960s and 1970s provided a fertile ground for sensemaking-related research, particularly work that challenged notions of an objective reality and instead emphasized the social construction of reality (Berger & Luckmann, 1966). Scholars were also making methodological advances and refining methods for studying how actors made sense of their

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lived experience (Cicourel, 1974; Heap, 1976). Psychologists extended Festinger's research (1957) on cognitive dissonance and examined how people made sense of conflicting beliefs and reconciled (or failed to reconcile) their expectations with their experienced reality (Bugental, Tannenbaum, & Bobele, 1968; Manis, 1978; Staw & Ross, 1978; Weick, 1967). Organizational scholars also explored how acting on beliefs could constrain future choices and possible action (Salancik, 1977a, 1977b)

By the 1980s, research in organizational behavior and strategic management had taken a more cognitive turn (Walsh, 1995). This trend was reflected in sensemaking research as scholars began to examine the cognitive underpinnings of sensemaking, such as how violated expectations triggered sensemaking (Louis, 1980), how stimuli from the environment were noticed, interpreted, and incorporated (Kiesler & Sproull, 1982), and why some cues received more attention than others (Daft & Weick, 1984; Starbuck & Milliken, 1988). But sensemaking research was also concerned with the consequences of actions taken as people made sense of their environment, showing that such actions could alter the very environment under consideration (Porac, Thomas, & Baden-Fuller, 1989) and even alter the trajectory of events or precipitate crises (Abolafia & Kilduff, 1988; Weick, 1988).

In the 1990s, sub-streams of the literature on various aspects of sensemaking became more developed and sensemaking research deepened and broadened. One of the most important advances in sensemaking in the 1990s was Weick's (1995) seminal book, *Sensemaking in Organizations*, which summarized the state of sensemaking research up to that point and derived a theoretical framework for understanding core aspects of sensemaking. Scholars drew on case studies of critical events to deepen our understanding of how sensemaking was accomplished in the midst of crises (Weick, 1990, 1993) and how sensemaking was used in the aftermath of crises to explain them (Gephart, 1993; Gephart, Steier, & Lawrence, 1990). The role of language as a building block of sensemaking also became a topic of study (Boyce, 1995; Hill & Levenhagen, 1995). Research on sensemaking broadened to include more conventional contexts and began to link sensemaking to important organizational outcomes, such as culture (Drazin et al., 1999), social influence (Ibarra & Andrews, 1993) and strategic change (Barr, 1998; Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996; Thomas et al., 1993).

From 2000 onwards, there has been an increasing focus on the social processes through which sensemaking is accomplished (Maitlis, 2005). Research on the relationship between sensemaking and language (Cornelissen, 2012; O'Leary & Chia, 2007), narrative (Brown & Humphreys, 2003; Dunford & Jones, 2000; Patriotta, 2003; Sonenshein, 2010), and discursive practices (Balogun, 2003; Balogun & Johnson, 2004, 2005; Rouleau, 2005; Rouleau & Balogun, 2011) continue to grow. Weick et al. (2005) reviewed current trends in sensemaking, highlighting power and emotions as important

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influences on sensemaking that required further study. Research on sensemaking has continued to broaden to include increasingly diverse settings (Anand & Peterson, 2000; Colville, Pye, & Carter, 2013; Lüscher & Lewis, 2008), to bridge levels of analysis (Weber & Glynn, 2006), and to explore the embodied and sociomaterial nature of what had previously been treated as a largely cognitive and discursive process (Cunliffe & Coupland, 2012; Stigliani & Ravasi, 2012; Whiteman & Cooper, 2011).

Defining Sensemaking

The depth and breadth of the sensemaking literature poses definitional challenges. Although the idea of sensemaking has pervaded much of the organizational literature, there is considerable variation in how it is used. While some scholars make reference to "sensemaking theory" (Holt & Cornelissen, 2013; Jensen, Kjaergaard, & Svejvig, 2009; Stein, 2004), there is no single theory of sensemaking. Indeed, consistent with many other writers (Drazin et al., 1999; Hsieh, Rai, & Xin Xu, 2011; Schultz & Hernes, 2013), Weick talks of a "sensemaking perspective", describing his seminal 1995 book as "a developing set of ideas with explanatory possibilities" (Weick, 1995, p. ix) and observing, "There is no such thing as a theory of organizations that is characteristic of the sensemaking paradigm" (Weick, 1995, p. 69). Others refer to a "sensemaking lens" (Sonenshein, 2009; Stensaker & Falkenberg, 2007; Vough, 2012), while still others (Helms Mills, Weatherbee, & Colwell, 2006; Mikkelsen, 2013) write of Weick's "sensemaking framework", often referring to the seven properties of sensemaking (Weick, 1995). In this chapter, we discuss sensemaking as a process, and as a scholarly literature that helps us better understand that process.

Sensemaking is often invoked as a general notion, without an associated definition. Even when sensemaking is defined (Table 1), it is given a variety of meanings. These definitional differences reveal important underlying ontological assumptions about what sensemaking involves, which in turn have important consequences for developing theory. One key ontological difference that is reflected in various definitions concerns whether sensemaking takes place within or between individuals. Some definitions frame sensemaking as a more cognitive process, focused on appraisal and interpretation, which is described in terms of developing frameworks, schemata, or mental models. For example, Starbuck and Milliken (1988, p. 51) "Sensemaking has many distinct aspects—comprehending, understanding, explaining, attributing, extrapolating, and predicting [. . .] What is common to these processes is that they involve putting stimuli into frameworks (or schemata) that make sense of the stimuli." Likewise, Hill and Levenhagen (1995, p. 1057) describe sensemaking in terms of how people "develop a 'vision' or mental model of how the environment works". Elsbach, Barr, and Hargadon (2005) explicitly link

Table 1 Selected Definitions of Sensemaking

Author	Definition
Louis (1980)	"[S]ense making can be viewed as a recurring cycle comprised of a sequence of events occurring over time. The cycle begins as individuals form unconscious and conscious anticipations and assumptions, which serve as predictions about future events. Subsequently, individuals experience events that may be discrepant from predictions. Discrepant events, or surprises, trigger a need for explanation, or post-diction, and, correspondingly, for a process through which interpretations of discrepancies are developed. Interpretation, or meaning, is attributed to surprises. Based on the attributed meanings, any necessary behavioral responses to the immediate situation are selected. Also based on attributed meanings, understandings of actors, actions, and settings are updated and predictions about future experiences in the setting are revised. The updated anticipations and revised assumptions are analogous to alterations in cognitive scripts." (p. 241)
Starbuck and Milliken (1988)	"Sensemaking has many distinct aspects—comprehending, understanding, explaining, attributing, extrapolating, and predicting, at least. For example, understanding seems to precede explaining and to require less input; predicting may occur without either understanding or explaining; attributing is a form of explanation that assigns causes.[. . .] What is common to these processes is that they involve placing stimuli into frameworks (or schemata) that make sense of the stimuli (Goleman, 1985)." (p. 51)
Gephart (1993)	"Sensemaking has been defined as the discursive process of constructing and interpreting the social world". (p. 1485)
Hill and Levenhagen (1995)	"To cope with these uncertainties, the entrepreneur must develop a 'vision' or mental model of how the environment works (sensemaking) and then be able to communicate to others and gain their support (sensegiving)." (p. 1057)
Weick (1995)	"Sensemaking is understood as a process that is (1) grounded in identity construction, (2) retrospective, (3) enactive of sensible environments, (4) social, (5) ongoing, (6) focused on and by extracted cues, (7) driven by plausibility rather than accuracy." (p. 17)
Taylor and Van Every (2000)	"[S]ensemaking is a way station on the road to a consensually constructed, coordinated system of action." (p. 275)
Balogun and Johnson (2004)	"Sensemaking is a conversational and narrative process through which people create and maintain an intersubjective world (Brown, 2000; Gephart, 1993, 1997, Watson & Bargiela-Chiappini, 1998)." (p. 524)

Table 1   (Continued)

Author	Definition
Balogun and Johnson (2005)	"Sensemaking is primarily a conversational and narrative process (Brown, 2000; Gephart, 1993, 1997) involving a variety of communication genre (Watson & Bargiela-Chiappini, 1998), both spoken and written, and formal and informal. However, more specifically, sensemaking involves 'conversational and social practices' (Gephart, 1993: 1469). It occurs through both verbal and non-verbal means (Gioia & Chittipeddi, 1991; Gioia et al., 1994). Individuals engage in gossip and negotiations, exchange stories, rumours and past experiences, seek information, and take note of physical representations, or non-verbal signs and signals, like behaviours and actions, to infer and give meaning (Isabella, 1990; Gioia & Chittipeddi, 1991; Gioia et al., 1994; Gioia & Thomas, 1996; Poole et al., 1989; Labianca et al., 2000). Change comes about through shifts in conversations and language (Barrett et al., 1995; Brown & Humphreys, 2003; Ford & Ford, 1995; Heracleous & Barrett, 2001)." (p. 1576)
Maitlis (2005)	"Sensemaking occurs in organizations when members confront events, issues, and actions that are somehow surprising or confusing (Gioia & Thomas, 1996; Weick, 1993, 1995). As Weick argued, 'The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs' (1993: 635). Thus, sensemaking is a process of social construction (Berger & Luckmann, 1967) in which individuals attempt to interpret and explain sets of cues from their environments. This happens through the production of 'accounts'—discursive constructions of reality that interpret or explain (Antaki, 1994)—or through the 'activation' of existing accounts (Gioia & Thomas, 1996; Volkema, Farquhar, & Bergmann, 1997). In either case, sensemaking allows people to deal with uncertainty and ambiguity by creating rational accounts of the world that enable action. Sensemaking thus both precedes decision making and follows it: sensemaking provides the 'clear questions and clear answers' (Weick, 1993: 636) that feed decision making, and decision making often stimulates the surprises and confusion that create occasions for sensemaking. Organizational sensemaking is a fundamentally social process: organization members interpret their environment in and through interactions with others, constructing accounts that allow them to comprehend the world and act collectively (Isabella, 1990; Sackmann, 1991; Sandelands & Stablein, 1987; Starbuck & Milliken, 1988; Weick & Roberts, 1993)." (p. 21)

Table 1   (Continued)

Author	Definition
Rouleau (2005)	"Sensemaking has to do with the way managers understand, interpret, and create sense for themselves based on the information surrounding the strategic change. Sensegiving is concerned with their attempts to influence the outcome, to communicate their thoughts about the change to others, and to gain their support. Although these processes appear to be conceptually different, the boundaries of each are permeated by the other. As discourse and action, sensemaking and sensegiving are less distinct domains (Hopkinson, 2001) than two sides of the same coin—one implies the other and cannot exist without it." (p. 1415)
Weick et al. (2005)	"[S]ensemaking unfolds as a sequence in which people concerned with identity in the social context of other actors engage ongoing circumstances from which they extract cues and make plausible sense retrospectively, while enacting more or less order into those ongoing circumstances." (p. 409)
Klein et al. (2006)	"Sensemaking is a motivated, continuous effort to understand connections (which can be among people, places, and events) in order to anticipate their trajectories and act effectively." (p. 71)
Gephart, Topal, and Zhang (2010)	"Sensemaking is an ongoing process that creates an intersubjective sense of shared meaning through conversation and non-verbal behavior in face to face settings where people seek to produce, negotiate, and sustain a shared sense of meaning." (pp. 284–285)
Sonenshein (2010)	"For Weick (1995), sensemaking involves individuals engaging in retrospective and prospective thinking in order to construct an interpretation of reality. 'Sensegiving' is a related process by which individuals attempt to influence the sensemaking of others (Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007). Both sensemaking and sensegiving are closely related to narratives. In fact, many scholars have treated sensemaking/ sensegiving as interchangeable with constructing narratives (Currie & Brown, 2003; Dunford & Jones, 2000; Gabriel, 2004)." (p. 479)
Cornelissen (2012)	"Sensemaking refers to processes of meaning construction whereby people interpret events and issues within and outside of their organizations that are somehow surprising, complex, or confusing to them." (p. 118)

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sensemaking with situated cognition and describe how the cognitive process of sensemaking connects existing schemas and organizational contexts.

In contrast, other definitions position sensemaking as a social process that occurs between people, as meaning is negotiated, contested, and mutually co-constructed. "Social" is one of Weick's (1995) seven key properties of sense-making. Weick et al. (2005, p. 409) elaborate that sensemaking unfolds "in a social context of other actors" and Maitlis (2005, p. 21) describes organiz-ational sensemaking as "a fundamentally social process" in which "organiz-ation members interpret their environment in and through interactions with each other, constructing accounts that allow them to comprehend the world and act collectively". This stance sees sensemaking as the "discursive processes of constructing and interpreting the social world" (Gephart, 1993, p. 1485). Consistent with scholars who emphasize the collective nature of sensemaking, our focus in this chapter is on the social dynamics of sensemaking in organiz-ations, rather than on individuals' interpretive acts.

Deriving an integrated definition.   Despite these notable differences, there are also several recurrent themes across definitions of sensemaking. First, sen-semaking is widely understood as dynamic, concerned with transience rather than constancy, such that meaning is made "in an ongoing present in which past experience is projected upon possible futures" (Hernes & Maitlis, 2010b, p. 27). This is captured in descriptions of sensemaking as a "process" (Balogun & Johnson, 2004; Cornelissen, 2012; Gephart et al., 2010; Sonenshein, 2010; Weick, 1995), a "recurring cycle" (Louis, 1980), or something that "unfolds as a sequence" (Weick et al., 2005). Second, cues—often in the form of violated expectations—play a central role in sensemaking. Sensemak-ing is triggered when "members confront events, issues, and actions that are somehow surprising or confusing" (Maitlis, 2005, p. 21) and when "[d]iscre-pant events, or surprises, trigger a need for explanation" (Louis, 1980, p. 241). Cues also shape sensemaking as it unfolds, since sensemaking is "focused on and by extracted cues" (Weick, 1995, p. 49), in a process in which individuals "interpret and explain set of cues from their environments" (Maitlis, 2005, p. 21).

Third, despite ontological differences, sensemaking is generally regarded as social because even individuals making sense on their own are embedded in a sociomaterial context where their thoughts, feelings, and behaviors are influ-enced by the "actual, imagined, or implied presence of others" (Allport, 1985, p. 3, cited in Weick, 1995, p. 39). Many scholars also see sensemaking as the process through which "people create and maintain an intersubjective world" (Balogun & Johnson 2004, p. 524), and "produce, negotiate, and sustain a shared sense of meaning" (Gephart et al., 2010, p. 285). Here, we should note that "shared" or "intersubjective" meaning need not indicate a completely over-lapping, agreed-upon understanding, but rather understandings that are close

enough, or equivalent, in ways that allow coordinated action (Donnellon, Gray, & Bougon, 1986; Gray, Bougon, & Donnellon, 1985).

A critical fourth feature of sensemaking concerns the action that people take to make sense of a situation which, in turn, enacts the environment that they seek to understand. Thus, it has been argued that sensemaking creates "rational accounts of the world that enable action" (Maitlis, 2005, p. 21), is "a continuous effort to understand connections (which can be among people, places, and events) in order to anticipate their trajectories and act effectively" (Klein et al., 2006), and is "enactive of sensible environments" (Weick, 1995, p. 30). These action-meaning cycles occur repeatedly as people construct provisional understandings that they continuously enact and modify. We thus define sensemaking as:

> a process, prompted by violated expectations, that involves attending to and bracketing cues in the environment, creating intersubjective meaning through cycles of interpretation and action, and thereby enacting a more ordered environment from which further cues can be drawn.

Forms of Sensemaking and Sensemaking-Related Constructs

The sensemaking literature includes an ever-increasing number of specialized forms of sensemaking (Table 2) and sensemaking-related constructs (Table 3). Some of the specialized forms of sensemaking are applications of sensemaking to a particular context (e.g. ecological or market sensemaking), and others refer to the nature of the cues or content of the sense made (e.g. intercultural, interpersonal, or prosocial sensemaking). However, some forms of specialized sensemaking, such as prospective and future-oriented sensemaking, challenge key ontological assumptions: the temporal orientation of sensemaking is important to our understanding of what sensemaking is, and is a topic of ongoing debate. We return to a more detailed discussion of temporality and sensemaking later in the paper.

While there has been something of a proliferation of sensemaking-related constructs in recent years, two have gained traction and make a significant contribution to our understanding of how sensemaking is accomplished. The first of these is *sensegiving*, "the process of attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality" (Gioia & Chittipeddi, 1991, p. 442). Sensegiving is often studied in the context of how organizational leaders or managers strategically shape the sensemaking of organizational members through the use of symbols, images, and other influence techniques (Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007; Rouleau, 2005). Sensegiving is not simply a top-down process, however, as those receiving sensegiving have their own interpretations and can actively resist efforts from leaders to influence strategic change

Table 2 Examples of Specific Forms of Sensemaking

Form of sensemaking	Definition
Constituent-minded sensemaking	"the process by which an arbiter renders an assignment of blame, guided not only by the arbiter's professional standards and rational analysis but also by his or her own biases and the anticipation of his or her constituents' biases." (Wiesenfeld, Wurthmann, & Hambrick, 2008, p. 235)
Cultural sensemaking	"how entrepreneurs or communities make sense of venture failures." (Cardon, Stevens, & Potter, 2011, p. 79)
Ecological sensemaking	"the process used to make sense of material landscapes and ecological processes." (Whiteman & Cooper, 2011, p. 889) "how actors notice and bracket ecologically material cues from a stream of experience and build connections and causal networks between various cues and with past enacted environments." (Whiteman & Cooper, 2011, pp. 890–891)
Environmental sensemaking	"actors make sense not only of the event itself, but of the broader organizational field." (Nigam & Ocasio, 2010, p. 826)
Future-oriented sensemaking	"sensemaking that seeks to construct intersubjective meanings, images, and schemes in conversation where these meanings and interpretations create or project images of future objects and phenomena." (Gephart et al., 2010, p. 285)
Intercultural sensemaking	"the process involving the selection of scripts that reflect individuals' cultural values and cultural history." (Fisher & Hutchings, 2013, p. 796) "… can lead to various outcomes such as schema development and a higher level of cultural understanding." (Fisher & Hutchings, 2013, p. 796)
Interpersonal sensemaking	"the role of interpersonal cues from others in helping employees make meaning from their jobs, roles, and selves at work." (Wrzesniewski, Dutton, & Debebe, 2003, p. 102)
Market sensemaking	"a macro version of Weick's approach to meaning construction in organizations." (Kennedy, 2008, p. 272).
Political sensemaking	"how powerful social actors construct the relationship between multinational enterprises (MNEs) and their multiple local contexts." (Clark & Geppert, 2011, p. 395)
Prosocial sensemaking	"process in which employees interpret personal and company actions and identities as caring." (Grant, Dutton, & Rosso, 2008, p. 898)
Prospective sensemaking	"the conscious and intentional consideration of the probable future impact of certain actions, and especially nonactions, on the meaning construction processes of themselves and others." (Gioia, Thomas, Clark, & Chittipeddi, 1994, p. 378)
Resourceful sensemaking	"the ability to appreciate the perspectives of others and use this understanding to enact horizon-expanding discourse." (Wright, Manning, Farmer, & Gilbreath, 2000, p. 807)

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Table 3 Examples of Specific Sensemaking-Related Constructs

Sensemaking-related construct	Definition
Sensebreaking	"the destruction or breaking down of meaning." (Pratt, 2000, p. 464)
Sensedemanding	"strenuous efforts to acquire and process information so as to establish 'a workable level of uncertainty' and equivocality (Weick 1969, p. 40)." (Vlaar, van Fenema, & Tiwari, 2008, p. 240)
Sense-exchanging	"different conceptions of organization are negotiated to socially construct the identity of an organization." (Ran & Golden, 2011, p. 421)
Sensegiving	"attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality." (Gioia & Chittipeddi, 1991, p. 442)
Sensehiding	"discourse can be mobilizing in terms of promoting a specific kind of thinking and action or manipulative in terms of hiding particular ideas." (Vaara & Monin, 2010, p. 6) "silencing alternative senses of integration or marginalization of particular voices." (Monin et al., 2013, p. 262)
Sense specification	"specification of explicit or implicit norms . . . . coining of principles, exemplary decisions and actions, symbolization, and quantification." (Monin et al., 2013, p. 262)

(Sonenshein, 2010). Furthermore, actors at any level of an organization, or outside its boundaries, may engage in sensegiving with others (Maitlis & Lawrence, 2007).

The second construct is *sensebreaking*, defined as "the destruction or breaking down of meaning" (Pratt, 2000, p. 464). While there is less research on sensebreaking, it captures an important part of processes involving sensemaking and sensegiving. Sensebreaking can motivate people to re-consider the sense that they have already made, to question their underlying assumptions, and to re-examine their course of action (Lawrence & Maitlis, 2014). It is often a prelude to sensegiving, in which leaders or organizations fill the meaning void created through sensebreaking with new meaning (Pratt, 2000).

Both sensegiving and sensebreaking have primarily been explored as activities carried out by leaders or managers (Mantere, Schildt, & Sillince, 2012; Pratt, 2000), but there is increasing interest in understanding how they are also used by others (Vlaar et al., 2008). In this chapter, we focus primarily on sensemaking research but discuss sensegiving and sensebreaking when they play a role in broader sensemaking processes.

Taking Stock of Sensemaking

Our review of the sensemaking literature has two parts: first, exploring how sensemaking is accomplished and, second, examining the other organizational activities that sensemaking helps to accomplish. We organize the first section around three questions, each addressing a core aspect of sensemaking: (1) how do events become triggers for sensemaking? (2) how is intersubjective meaning constructed? and (3) what is the role of action in sensemaking? In the second section of the review, we examine sensemaking as an explanatory mechanism for other important organizational processes, focusing on how sensemaking contributes to change, learning, and creativity and innovation.

How is Sensemaking Accomplished?

How do events become triggers for sensemaking?   Sensemaking is triggered by cues—such as issues, events, or situations—for which the meaning is ambiguous and/or outcomes uncertain. Such occurrences, when noticed, interrupt people's ongoing flow, disrupting their understanding of the world and creating uncertainty about how to act. This happens when there are discrepancies between expectations and reality—either an unexpected event, such as an unprecedented strike by doctors (Meyer, 1982), or the non-occurrence of an expected event, such as an organization reneging on promises made to its employees (Robinson & Morrison, 2000). These violations of expectations can vary greatly in magnitude, ranging, for example, from the "leemers" experienced by aviators, feelings "that something is not quite right, but you can't put your finger on it" (Weick & Sutcliffe, 2007, p. 31), to "cosmology episodes" which occur "when people suddenly and deeply feel that the universe is no longer a rational, orderly system" (Weick, 1993, p. 633). Unexpected events do not necessarily trigger sensemaking; it occurs when the discrepancy between what one expects and what one experiences is great enough, and important enough, to cause individuals or groups to ask what is going on, and what they should do next. This experience of a discrepancy, or violation, is subjective, and how significant it feels will be influenced by a variety of factors, including its impact on individual, social, or organizational identity (Corley & Gioia, 2004; Pratt, Rockmann, & Kaufmann, 2006) and personal or strategic goals (Balogun & Johnson, 2004; Maitlis, Vogus, & Lawrence, 2013). Even when discrepant cues significantly disrupt identity or goals, however, they may still not trigger sensemaking if group norms or the organizational culture mitigate against it. Indeed, the literature offers many examples of situations in which people accommodate, explain away, or normalize discrepant cues (Dunbar & Garud, 2009; Vaughan, 1996; Watzlawick, 1976; Weick, 1988), often because they are part of systems, routines, and cultures that inadvertently reduce mindfulness (Levinthal & Rerup, 2006; Weick & Sutcliffe,

2006) or encourage accommodation in service of production targets (Vaughan, 1996).

Studies of sensemaking in organizations have explored a variety of different contexts in which the surprise or confusion caused by violated expectations trigger sensemaking. These include environmental jolts (Meyer, 1982; Milliken, 1990) and organizational crises (Brown & Jones, 2000; Weick, 1988, 1993; Wicks, 2001), threats to organizational identity (Dutton & Dukerich, 1991; Elsbach & Kramer, 1996), and planned organizational change initiatives (Balogun & Johnson, 2004; Gioia & Chittipeddi, 1991). We selectively review each of these areas of research, identifying the sorts of issues or events that have been found to trigger sensemaking in each situation. Some scholars (Hoffman & Ocasio, 2001; Nigam & Ocasio, 2010; Ocasio, 2011) have noted that an event must first catch our attention in order to trigger sensemaking and a separate stream of work, largely outside of the sensemaking literature, has developed that examines what it takes for an event to become noticed (Bouquet & Birkinshaw, 2008; Hoffman & Ocasio, 2001; Rerup, 2009). We return to this point later.

i) Environmental jolts and organizational crises.   Some of the earliest research on sensemaking examined it as a response to environmental jolts and other significant exogenous changes. This work was among the first to high-light organizations as interpretive systems, triggered to engage in sensemaking by perceived shifts in the external environment (Daft & Weick, 1984; Meyer, 1982; Milliken, 1990). For example, Meyer (1982) showed how an unprece-dented doctors' strike disrupted hospital administrators' abilities to operate as normal, engendering sensemaking that produced different interpretations of the strike and its implications for their hospitals. In Milliken's (1990) study of university administrators, a change in student population demo-graphics provided the prompt for sensemaking about different aspects of environmental uncertainty. Focusing on large-scale environmental changes of longer duration, Bogner and Barr (2000) showed how "hypercompetition" completely undermined executives' assumptions about competitors, custo-mers, and other aspects of the industry structure. Sensemaking triggers included major technological advances, government regulatory changes, and other changes that created an environment so dynamic and unpredictable that existing frameworks for achieving competitive advantage repeatedly lost their meaning.

While environmental jolts present challenges to organizational routines, crises can have a more diffuse impact, disrupting a wide range of existing understandings and driving an intense and urgent search for explanations and appropriate courses of action (Pearson & Clair, 1998; Turner, 1976; Weick, 1993). As a "low-probability, high-impact event that threatens the via-bility of the organization and is characterized by ambiguity of cause, effect, and

means of resolution" (Pearson & Clair, 1998, p. 60), a crisis provides powerful sensemaking triggers. Studies of individuals experiencing the loss of a child or a life-threatening illness (Keesee, Currier, & Neimeyer, 2008; Sears, Stanton, & Danoff-Burg, 2003) reveal how crises shatter fundamental assumptions (Janoff-Bulman, 1992) and trigger sensemaking about the event, the self, and often the world at large (Park, 2010). At the organizational and societal levels, scholars have examined crisis-triggered sensemaking as it occurs during an unfolding crisis (Christianson et al., 2009; Weick, 1988), as well as in the public domain after a crisis. These latter analyses include examinations of public inquiries into malpractice in medical, governmental, and private sector organizations (Brown, 2000, 2005; Brown & Jones, 2000), a deadly heat wave (Boudes & Laroche, 2009), and environmental disasters (Gephart, 1984, 1993, 2007), showing how crises trigger sensemaking about responsibility and blame in ways that often legitimize the social institutions under investigation.

Looking at sensemaking triggered in the course of an evolving crisis, Christianson et al. (2009) examine the collapse of the roof at the B&O Museum, which crushed many valuable artifacts and endangered those that remained. This disaster not only disrupted plans for a major fair to celebrate American railroading but also fundamentally challenged organizational members' understandings of what, if anything, the museum could be in the future. Sensemaking was thus triggered about whether the roof collapse should be understood as an institution-ending disaster, or a temporary setback that could spawn further action and enable renewal.

Other research focuses on crisis situations that trigger repeated efforts to understand as equivocal cues portending disaster are noticed, and variously acted upon and ignored. For example, employees at the Union Carbide plant in Bhopal first discounted the discrepant cues they encountered in the form of a distinctive smell and an unexpected reading on a pressure gauge (Weick, 1988, 2010). With the accumulation of strange cues (the increasingly pervasive odor, further high gauge readings, throbbing from the tank, and a vaporizing leak) sensemaking was triggered once again as those on the scene tried to connect these cues in the context of the strong belief they held, that a massive chemical reaction could not occur in a plant that had been closed for six weeks (Lapierre & Moro, 2002; Weick, 2010). This research shows how sensemaking can be triggered at several points in an unfolding crisis, as actors first consider the significance of disparate cues—often in the context of sticky frames that drive them to discount them—and subsequently encounter further cues, frequently generated through their own actions (and inaction), that prompt them to ask again what is going on. Similar elements are seen in Weick's (1993) famous Mann Gulch analysis.

It is instructive to compare organizational or societal cultures that enable discrepant cues to trigger sensemaking and those that inadvertently impede it. For

example, at the National Aeronautics and Space Administration (NASA), shuttles were found to shed foam on almost every flight (Dunbar & Garud, 2009). NASA had documented the potential dangers of foam shedding, but its cause remained unclear. Despite this, foam shedding was reclassified over time from an "in-flight anomaly" to an "accepted risk" that was "not a safety-of-flight issue". It thus became something to be expected, and, as such, unlikely to trigger sensemaking. This "normalization of deviance", when people notice but quickly normalize anomalous cues that become assimilated into an existing account (Vaughan, 1996), resulted in disaster for the Columbia mission.

At the societal level, Cerulo (2006, p. 6) discusses the effect of Americans' "positive asymmetry", "a way of seeing that foregrounds or underscores only the best characteristics and potentials of people, places, objects, and events". This way of seeing, she argues, is reinforced by cultural practices such as making the worst invisible, and recasting the worst as something positive, that together prevent people from anticipating a wide range of crises. Through a sensemaking lens, positive asymmetry, a cognitive tendency that is institutionalized through cultural practices and organizational structures, reduces the chance that cues auguring a crisis will trigger sensemaking and action that could prevent its occurrence or minimize its impact.

These examples contrast with studies that reveal how high reliability organizations (HROs) can avoid catastrophes despite operating in environments that lend themselves to disaster. They do this significantly through practices such as having a "preoccupation with failure", a "reluctance to simplify", and a "sensitivity to operations" (Weick & Sutcliffe, 2007) that enable members to catch problems early, noticing and acting upon weak cues. Such practices thus form part of an organizational culture that encourages sensemaking, and are especially important because of the prevalence and potential impact of contradictions and ambiguities in HROs, where sensemaking may be triggered repeatedly, almost on a continuous basis.

ii) Threats to identity.   Identity threat is a powerful prompt for sensemaking. As Weick (1995, p. 23) observed, "Sensemaking is triggered by a failure to confirm one's self". Individuals construct their identity in ways that meet human needs for self-enhancement, self-efficacy, and self-consistency (Erez & Earley, 1993). When one or more of these comes under threat, people are triggered to engage in sensemaking around the sources of threat, acting so as to restore their identity.

Although trauma and loss researchers have addressed the individual sensemaking that follows such major challenges to self (Janoff-Bulman, 1992; Neimeyer, Prigerson, & Davies, 2002), less is known about this process in a work or organizational context. Some research has examined the sensemaking that is triggered by an experience or event that undermines people's ability to do work that is central to their identity. One example is Maitlis' (2009) analysis

of sensemaking in professional musicians following an injury that prevented them from playing, severely disrupting their understandings of who they were. In a similar vein, Wainwright and Turner (2004) describe "epiphanies of identity" in ballet dancers dealing with injury and aging—conditions that deeply challenge their identities as dancers, and prompt sensemaking about who they might become. Petriglieri (2011) highlights different kinds of sense-making triggered by an identity threat, arguing that when the identity is newly acquired (for example, when embarking on a new profession), individuals are prompted to change the *meaning* of the new identity. To wit, Pratt et al. (2006) found that sensemaking was triggered for medical residents by the discrepancy between their new identity as "physician" and their experience of the many menial tasks their work demanded. In contrast, when a long-established iden-tity is threatened, sensemaking is more likely to focus on the *importance* of that identity, often revising it downwards to reduce the impact of the threat (Petri-glieri, 2011).

More common than research on individual identity threat in organizations are examinations of sensemaking triggered by an organizational identity threat. Several studies have explored the impact on sensemaking of events that threa-ten an organization's identity by creating a discrepancy between the organiz-ation's identity and its image. Dutton and Dukerich's (1991) study of the Port Authority revealed how the deterioration of the organization's image associated with its response to the issue of homelessness deeply threatened the Port Authority's identity, triggering member sensemaking about the kind of organization it was and how it wanted to be seen. Similarly, in an analysis of Bang and Olufsen's responses to identity threats over a 25-year period, Ravasi and Schulz (2006) show how shifts in the competitive environment prompted managers on three separate occasions to engage in sensemaking to answer questions such as "Is this who we really are? Is this who we really want to be?" (Ravasi & Schulz, 2006, p. 446). Managers' sensemaking drew on cues from the organization's culture, allowing the development of new accounts of the organization's identity that were rooted in its valued heritage.

Studies of organizational identity threat in business schools show how sen-semaking is triggered following the release of rankings seen to conflict with the organizational identity and perceived image of some schools (Elsbach & Kramer, 1996; Martins, 2005). In Elsbach and Kramer's (1996) study, members of disappointingly ranked schools were prompted to engage in sen-semaking about core identity attributes of their school, and its standing relative to others. Specifically, they worked to affirm positive aspects of the organiz-ational identity that the rankings had overlooked, making sense of the incon-gruous ranking in ways that reduced the identity threat. Martins' (2005) work on the impact of rankings on organizational change, however, suggests that when an organizational identity is strong, members may discount the contra-dictory data of rankings, and so fail to engage in sensemaking.

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Other studies have shown that sensemaking is triggered not only when an organization's identity is threatened in a specific, negative way but also when members simply become uncertain about what the organizational identity is. Such was the case in Corley and Gioia's (2004) study of a corporate spin-off where the identity labels remained the same as they were prior to the spin-off, but the meanings of these labels took on an equivocal quality, driving a search for understanding. Organizational identity ambiguity was also seen to prompt sensemaking in Tripsas' (2009) study of a digital photography company, Linco, after it made a significant strategic shift away from the technology by which it defined itself. For several years, organizational members and external stakeholders engaged in sensemaking about who Linco was and what it stood for, before eventually converging on a new identity as a memory company.

At the industry level, Hoffman and Ocasio (2001) explore the impact of a threat to the industry image and identity and find that a non-routine environmental event (such as the Exxon Valdez oil spill) attracts attention and triggers sensemaking in the U.S. chemical industry and general public when outsiders hold the industry accountable and insiders perceive it as a threat to their industry image. Rao, Monin, and Durand (2003) provide an institutional perspective with their study of the emergence of the nouvelle cuisine "identity movement", which disseminated identity-discrepant cues that jeopardized the role identities of those producing classical French cuisine. This in turn triggered sensemaking in elite chefs that led them to distance themselves from their former identity, and reconfigure their roles in ways consistent with the new logic.

Given the central place of identity in sensemaking (the first of Weick's (1995) seven characteristics of sensemaking), it is not surprising that identity threat is a significant trigger for sensemaking, seen at the individual, organizational, industry, and institutional levels. Research has shown that when identity is threatened, or even when it simply becomes ambiguous, people respond by working to understand the basis for the challenge, and often to alleviate it by enacting and constructing new accounts of themselves and their organizations. Some have argued that this reaction is mediated by powerful emotions. For example, at the individual level, the loss of or damage to a significant aspect of the self is associated with intense negative emotions (Maitlis, 2009; Neimeyer et al., 2002; Pals & McAdams, 2004). At the organizational level, Brown and Starkey (2000) have argued that members have elaborate defense mechanisms that protect their individual and organizational identities from threat, and the anxiety and intense discomfort that comes with such threat. Sensemaking may thus be understood as an important way of trying to gain control and create predictability when people feel most deeply threatened.

iii) Planned change interventions. In contrast to the unforeseen nature of environmental jolts, organizational crises, and threats to identity,

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sensemaking can also be triggered by events that are anticipated and planned—at least by some in the organization. Much sensemaking research has been carried out in the context of change interventions, which, despite initial planning, frequently violate expectations and generate considerable uncertainty, ambiguity and confusion for those involved. Planned change processes may directly target organizational meanings, such as identity or culture, triggering sensemaking from which changes in structure and practices follow. Alternatively, change processes may begin with a structural transformation that disturbs existing understandings of the organization and so leads to sensemaking (Balogun & Johnson, 2004; Mantere et al., 2012). Of course, changes in the organization's structure and interpretive framework can also be entwined from the start, and sensemaking triggered both by managerial sensegiving and by changes in employees' daily practices and interactions.

Several studies have explored how sensemaking is initiated when a new CEO or President arrives with a vision for the organization that challenges existing beliefs (Denis, Langley, & Cazale, 1996; Gioia & Chittipeddi, 1991; Gioia et al., 1994), or when existing leaders commit to a new vision in response to environmental changes (Barr, 1998; Dunford & Jones, 2000; Nag, Corley, & Gioia, 2007; Ravasi & Schultz, 2006). Common to this body of work is the finding that leaders attempt to trigger sensemaking by conveying the importance of adopting a new direction for the organization, in part by undermining the viability of the previous direction. Thus, sensemaking by organizational members occurs in response to leaders' sensebreaking (as they challenge the viability of the status quo) and their sensegiving (as they work to shape members' understandings of a positive way forward). This is facilitated when leaders extract and draw attention to cues from prevailing industry discourses suggesting the need for change (Humphreys & Brown, 2002; Maitlis & Lawrence, 2007), evidence of the organization's failing performance (Elsbach & Kramer, 1996; Sonenshein, 2010), or discrepancies between the organizational identity and external images of the organization (Corley & Gioia, 2004; Dutton & Dukerich, 1991).

Certain conditions, however, seem to create deterrents to sensemaking, making it hard for leaders to trigger a search for new meanings. Nag et al. (2007) studied an engineering-oriented R&D organization which leaders sought to re-orient toward business development. They showed how a strong organizational identity and members' efforts to preserve the collective practices through which they accomplished their work buffered them from leaders' efforts to trigger the construction of new meanings and purpose in the organization, impeding large-scale change. Mantere et al.'s (2012) intriguing analysis of a governmental organization that cancelled a planned merger presented leaders with a different problem. The executive team that introduced the merger had quite effectively discredited staff beliefs about the organization, which, alongside the meaning void created by staff uncertainty,

ignorance, and panic about the future, and the top team's sensegiving around the benefits of merging, triggered sensemaking about the merger and the post-merger strategy. The leaders were victims of their own success, however: when the merger was cancelled and they sought to guide staff members back to their previous construction of the organization, it proved hard to trigger sensemaking. This was, the authors argue, because of the sensebreaking and sensegiving residuals (recollections of previous accounts) that remained from leaders' earlier efforts to change members' interpretive schemes, which primed members against contradictory accounts based on alternative sets of cues.

In addition to studies of leaders' efforts to change the interpretive schemes of organizational members, there has been considerable research on organizational change driven by major restructuring initiatives, including the creation of a decentralized organizational form, the company-wide introduction of self-managing teams, and post-merger integration (Balogun & Johnson, 2004; Lüscher & Lewis, 2008; Vaara, 2003; Yu, Engleman, & Van de Ven, 2005). This research suggests that changes in organizational structure, roles and responsibilities create contradictions and paradoxes for members, triggering sensemaking about what their jobs entail and how to do them (Lüscher & Lewis, 2008). Work by Balogun (2003, 2006) and Balogun and Johnson (2004, 2005), for example, examines a UK utility involved in a significant strategic change initiative, and documents the great number and range of sensemaking triggers that this change created for middle managers. These included organizational change goals, such as new working practices; specific change interventions, such as total quality training and process redesign; and also flaws in how change was being implemented, such as the pace of redundancies and inadequate communication. All of these were at odds with managers' existing understandings of their organization, causing them to grapple with what the organization was becoming and the implications for themselves and their teams.

In sum, we find that sensemaking begins when people experience a violation of their expectations, or when they encounter an ambiguous event or issue that is of some significance to them. Often this involves a threat to taken-for-granted roles and routines, causing those in organizations to question fundamental assumptions about how they should act. Crises can be powerful prompts for sensemaking but crises also arise from situations in which the organizational culture and prevailing practices inhibit sensemaking from being triggered. Indeed, such occasions suggest that sensemaking is an effortful and potentially costly process that requires people to feel motivated give up their existing accounts of the world and to work to construct new meanings. They are driven to do this when they experience a threat to their identity and the intense negative emotions that this arouses, but are less likely to engage in sensemaking when individual or collective identity is strong and positive, capacity is low, or when they are highly invested in certain practices

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and beliefs. In these cases, individuals and collectives become "buffered" from potential sensemaking triggers, and a much more powerful event is required to induce sensemaking.

How is intersubjective meaning constructed in organizations?   Meaning in organizations is highly contested and often negotiated among a wide range of actors (Berger & Luckmann, 1966; Humphreys & Brown, 2002), who may understand an event or issue in a similar way, but are at least as likely—because of their different positions, interests, and backgrounds—to construct it differently from one another (Brown, 2004; Brown, Stacey, & Nandhakumar, 2008). Much human activity in organizations is thus concerned with collective efforts to make sense. As noted earlier, scholars have described this process in different ways. When sensemaking is seen as taking place within individuals, then collective meaning making occurs as individuals advocate for a particular view and engage in influence tactics to shape others' understandings. In contrast, when sensemaking is regarded as unfolding between individuals, intersubjective meaning is constructed through a more mutually co-constituted process, as members jointly engage with an issue and build their understanding of it together.

Jazz orchestras are a classic example of mutually constructed meaning: members must listen closely to each other, take turns leading and following, and respond together in real-time to novel or unexpected performance (Hatch, 1999; Meyer, Frost, & Weick, 1998). Yet, even in more top-down processes, when organizational leaders engage in sensegiving, organizational members are not simply passive recipients of meaning but instead engage in their own sensemaking and adopt, alter, resist, or reject the sense they have been given (Gioia & Chittipeddi, 1991; Gioia et al., 1994; Pratt, 2000; Sonenshein, 2010). Likewise, "framing contests" can develop between peers as they attempt to persuade each other to adopt their perspective and, eventually, one viewpoint emerges as dominant (Kaplan, 2008).

In this section, we unpack the collective dynamics that underpin how intersubjective meaning is constructed. We first investigate who gets involved in shaping sensemaking in organizations, and the impact of different parties' involvement on the sensemaking process. Second, we look more closely at the resources organizational actors use to make sense. We focus on the use of certain discursive practices, including metaphor, narrative, and more specific examples of situated practices. Inherent to this process is the construction of accounts through which organizational members articulate their emerging understandings. In the final part of the chapter, we go on to consider important emerging research that examines the role of sociomaterial practices alongside the more commonly studied use of language in sensemaking.

i) Those who shape sensemaking in organizations.   Research on sensemaking highlights important roles for both leaders and other organizational stakeholders. Indeed, it has been found that the relative influence of leaders and other groups determines the form of the sensemaking process that is produced. In a study of sensemaking in symphony orchestras, Maitlis (2005) compared processes in which leaders were more and less active, and stakeholders more and less active, to distinguish four different forms of organizational sensemaking. "Guided" sensemaking occurs when leaders are very energetic in constructing and promoting understandings and explanations of events, and stakeholders are also actively engaged in attempting to shape beliefs about certain elements of the issues. "Fragmented" sensemaking processes emerge when stakeholders raise issues, generate accounts of a situation, and argue for potential solutions in the context of leaders who do not try to organize or control discussions. "Restricted" sensemaking results from leaders promoting overarching accounts of issues they encounter which stakeholders tend to accept with relatively few attempts to provide alternative understandings; and "minimal" sensemaking occurs when both leaders and stakeholder await others' interpretations of and reactions to an issue, which typically come in response to some external trigger.

Examining the sensemaking literature through the lens of this framework, we find organizational sensemaking is most often restricted in nature, with leaders driving and controlling the process, and periodically eliciting input from other organizational members on certain issues (Corley & Gioia, 2004; Gioia & Chittipeddi, 1991; Gioia et al., 1994; Howard-Grenville, Metzger, & Meyer, 2013; Mantere et al., 2012; Ravasi & Schultz, 2006). For example, in Corley and Gioia's (2004) study of a corporate spin-off, leaders acted on a sensegiving imperative created by the growing ambiguity about the organization's identity. Working to communicate a desired future image of the company as values-led and caring, they tried to model behaviors that reflected the desired future image they were promoting. Other members of the spin-off, struggling with the tensions around the organization's identity, could not construct a new account of who they now were collectively. While their confusion prompted leaders to refine the future image they promoted, members were relatively passive in creating a new identity for the organization. Monin et al.'s (2013) analysis of a "carefully managed M&A" provides another example of restricted sensemaking. Here, leaders engaged continuously in sensegiving about justice in the newly formed organization, while members responded in different ways, some accepting leaders' constructions, while others distanced themselves from the issue, expressing cynicism. Even from those who actively opposed leader sensegiving, however, resistance was rarely strong. This kind of top-down sensemaking process is common in the literature, perhaps unsurprisingly, since leadership has been described as

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fundamentally concerned with the "management of meaning" (Smircich & Morgan, 1982), and sensemaking as a key leadership capability (Ancona, 2011; Shamir, 2007).

Other studies reveal fragmented sensemaking, where the process is dominated by middle managers (Balogun & Johnson, 2004, 2005) or other organizational members (Walsh & Bartunek, 2011). In Balogun and Johnson's (2004, 2005) study of strategic change in a utility company, middle managers were very active in interpreting the meanings of events for themselves and their teams through a range of verbal, textual and non-verbal behaviors. Sensemaking also occurred in formal, vertical processes with leaders, but much more of it took place laterally, through informal processes, away from, and out of the control of, senior management. Thus, in Maitlis' (2005) terms, member sensemaking was highly animated but uncontrolled as leaders neither organized the vigorous member sensemaking activities nor integrated members' constructions into coherent collective accounts. Other research suggests that this integrative role in sensemaking can be very effectively played not only by leaders, but also by middle managers who are well-placed to facilitate, blend, and synthesize the emerging constructions from a range of different managerial groups (Beck & Plowman, 2009). Indeed, because middle managers work at the boundaries between senior management and the rest of the workforce, their role may involve continuously responding to the dual demands of sensemaking and sensegiving.

A decision concerning the appointment of a new principal conductor invoked guided sensemaking in a British symphony orchestra (Maitlis, 2005). The Executive Director and Board Chairman carried out extensive sensegiving with different stakeholder groups to explain the strengths, benefits, and requirements of a particular candidate. At the same time, the process was highly animated over an extended period of time because stakeholders—including orchestral musicians, funders, and others—sought to shape understandings of the candidate, the orchestra's needs and resources, and what the role of principal conductor meant. Guided sensemaking occurs when several different parties have the legitimacy, expertise, and opportunity to drive sensemaking, and feel an issue is important enough to engage in it (Maitlis & Lawrence, 2007).

Studies revealing minimal sensemaking are rare, although we do see periods in which there is little effort by leaders or by others to shape organizational meanings. One such example is found in the inertial phase of a community identity regeneration process (Howard-Grenville et al., 2013), where, over time, the new community leader failed to promote the town's identity, to attract new resources in support of its identity, or to enable experiences that could build a sense of identity in other community stakeholders. These other stakeholders responded by curtailing their own efforts to perpetuate the town's identity, which gradually went into decline. Some research also shows

shifts between different forms of sensemaking around an issue, for example, moving from a more restricted, leader-controlled process, to a guided one, where leaders remain active, guiding and coordinating other stakeholders who start to take on a bigger role in the construction of accounts (Gioia et al., 1994; Sonenshein, 2010).

  ii) What organizational actors do to construct intersubjective meaning. Looking beyond broad patterns of member interaction, we now examine the discursive practices that actors use in the sensemaking process. Although some scholars emphasize the cognitive element of sensemaking (Kiesler & Sproull, 1982; Louis, 1980; Thomas et al., 1993), in most current writing organizational sensemaking is more often understood as fundamentally concerned with language (Nicholson & Anderson, 2005; Sonenshein, 2006; Taylor & Robichaud, 2004; Weick, 1995). As Taylor and Van Every (2000, p. 40) note, "sensemaking involves turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard for action". Weick (1995, p. 99) cites Huber and Daft (1987, p. 151) to capture the social and organizational implications of this process: "When confronted with an equivocal [ambiguous, confusing] event, managers use language to share perceptions among themselves and gradually define or create meaning through discussion." Here, we consider some of the literature that has attempted to identify how this is done. Two sets of work highlight the importance of narrative and of metaphor as sensemaking resources (Abolafia, 2010; Boje, 1991, 1995; Brown, 2000, 2004; Brown & Humphreys, 2003; Brown et al., 2008; Cornelissen, 2012; Cornelissen & Clarke, 2010); other research emphasizes the local and situated nature of discursive practices in the construction of intersubjective meaning in organizations (Maitlis & Lawrence, 2003, 2007; Rouleau, 2005; Rouleau & Balogun, 2011).

  Research on narratives is probably the largest body of discursive work on organizational sensemaking. Indeed, many scholars equate narrative with sensemaking, describing narrative as "the primary form by which human experience is made meaningful" (Polkinghorne, 1988, p. 1) and "the preferred sensemaking currency" (Boje, 1991, p. 106, cited in Abolafia, 2010, p. 349). A great benefit of examining organizational sensemaking through a narrative lens is that it reveals not only who is involved and what they are doing but also the meanings that they are constructing in the process. As such, it spotlights the plurivocality of organizations and the much contested nature of organizational meanings. It does so by uncovering the very different stories told by different groups and showing how even a dominant organizational narrative can be embellished and modified by less powerful individuals in ways that significantly change its meaning.

  A significant stream of research in this vein is by Brown and colleagues (Brown et al., 2008; Currie & Brown, 2003; Humphreys & Brown, 2002), who

explore how narratives are used in organizations to define individual and collective identities. Their research reveals the tensions underpinning the negotiation of organizational identity, as leaders try to gain acceptance for their narratives about what is central, distinctive, and persistent about an organization (Humphreys & Brown, 2002), while others undermine the dominant narrative as they struggle and often fail to reconcile it with their individual identity narratives. Alongside other scholars who have emphasized the plurality of narratives present in organizations (Boje, 1991; Rhodes, 2001), Brown's work highlights organizations as "polyphonic, socially constructed verbal systems characterized by multiple, simultaneous and sequential narratives that variously interweave, harmonize and clash" (Currie & Brown, 2003, p. 566). Sensemaking is the process through which these narratives are contested and collective accounts negotiated. However, since narratives serve to support different parties' identity and legitimacy claims, agreement, if reached, is often temporary and produces fragile shared accounts (Brown et al., 2008; Patriotta, 2003).

While such scholars are skeptical that organizational members construct truly shared narratives, others believe they do, and have studied the process through which this happens. Sonenshein (2010), for example, argues that leaders may try to impose a reality on employees, but employees use the management narrative as set of symbolic resources from which to construct their own meanings (Swidler, 1986). In a study of strategic change, he showed that although employees may adopt management's anxiety-reducing stability narrative about the organization (the change is consistent with the status quo), they draw on their own experience to tell either a supportive stability narrative (the change preserves what they value about the organization) or subversive stability narrative (the change preserves what is wrong with the organization). In both cases, however, these employees share and promulgate the narrative that the organizational change is not significant or particularly disruptive.

Abolafia (2010) also takes a close interest in how a collective narrative is co-constructed. From his study of meetings of the Federal Open Market Committee, the Federal Reserve's most important policy-making group, Abolafia (2010) identifies key steps in the sensemaking process through which a shared narrative was constructed. The process begins with abduction, as policy makers compare their operating model of the financial market to the current conditions in an effort to establish "the facts" of the situation. As group members come to agree that the operating model does not fit these facts, they start to plot the narrative, weaving facts and key events into a plausible story that fits the context. Over subsequent policy meetings, committee members retell and elaborate parts of the narrative, glossing it to make it more coherent and explanatory, or a better reflection of an individual's interpretation. Chairman Greenspan exercises power in these discussions, comparing the emerging narratives and expressing his support for one—the progressive narrative of recovery. The final step of the sensemaking process

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is selective retention, as committee members negotiate an agreed policy choice. This fine-grained analysis allows us to see how a collective achieves shared meaning through discussion, debate, and the exercise of power—a difficult and emotional process but one that generates an account supported by most (but not all).

We turn now to metaphor, which has seen a surge of interest in the sensemaking literature in recent years (Cornelissen, 2005; Cornelissen, Oswick, Christensen, & Phillips, 2008; Nicholson & Anderson, 2005). The first studies of metaphor in sensemaking came earlier, however, showing the prevalence and importance of this rhetorical device that connects cues and frames, a fundamental act of sensemaking (Gioia et al., 1994; Grant & Oswick, 1996; Hill & Levenhagen, 1995). Gioia et al.'s (1994) analysis of sensemaking in a strategic planning task force of a university revealed how task force members, working under intense pressure, used metaphors first to construct their social identity (e.g. "a smokescreen"), and later to legitimize their role in the change effort by redefining themselves (e.g. "implementors of the President's wishes"), and exert lasting influence on other stakeholders' understandings by creating new planning units (e.g. "prisms transmitting a spectrum of inputs"). Metaphors were key in shaping task force members' understandings of their group and of the strategic change initiative itself.

More recently, Cornelissen's work (2005, 2012; Cornelissen & Clarke, 2010) has been important in explaining the power of metaphor in the sensemaking process. This comes partly through metaphors' ability to create order in unfamiliar situations, but more significantly because they are often evaluative and provide justification for certain actions. Since sensemaking is concerned with explaining previous actions to oneself and others (Weick, 1995), metaphors play a valuable role in validating some accounts and discrediting others. For example, when pediatric cardiac surgery staff at the Bristol Royal Infirmary organized their sensemaking around the metaphor of a "learning curve" (Weick & Sutcliffe, 2003), this served to justify their consistently poor performance (Cornelissen, 2012). As Cornelissen (2012) shows in his study of corporate communications professionals, sensemakers' use of metaphors varies depending on factors such as their role-situated commitments (commitment to carrying out certain activities as part of a professional role) and the salience of others' expectations about them. When role-situated commitment is high and the salience of others' expectations low, individuals make sense of an event by blending metaphors to prescribe a course of action; when the opposite is true, they use single metaphors that align with others' expectations. Critically, this work reveals how sensemakers' use of discursive devices such as metaphor shifts significantly depending on their relationship to the issue in question and their audience.

Another set of work focuses on the situated nature of key discursive practices to highlight the importance of the sociocultural context for meaning

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construction in organizations (Rouleau, 2005; Rouleau & Balogun, 2011). In their research on middle managers, for example, Rouleau and Balogun (2011) identify and explore the managerial activity of "performing the conversation", which involves formal and informal conversations with those within and outside the organization to draw them into managers' agendas. Critical to this activity is "setting the scene", a set of practices through which managers create the context for the conversation: building networks of relevant parties, bringing the right people together for particular occasions, and building a personal image as a partner or spokesperson for an issue to facilitate future scene setting. To engage in these practices successfully, middle managers need an understanding of the sociocultural context that allows them to use appropriate language, emotional displays, and attitudes in connecting to stakeholders. Sense is thus made and influences others not just through language but through an appreciation of its situated nature: "the combination of language use in particular settings with particular stakeholder groups" (Rouleau & Balogun, 2011, p. 975). The importance of situated discursive practices is also prominent in Rouleau's (2005) analysis of micro-practices of sensemaking, which reveals how actors continually (and often unconsciously) modify practices within their daily routines and conversations so that their interpretations of change resonate with their audiences and fit the changing context.

What is the role of action in sensemaking?   Weick asserts that action is an integral part of sensemaking—that is, we know the world by taking action and seeing what happens next. As he writes, "Cognition lies in the path of action. Action precedes cognition and focuses cognition" (Weick, 1988, p. 307). First, actions are important because they create more raw ingredients for sensemaking by generating stimuli or cues: people can quickly learn more about a situation by taking action and paying attention to the cues generated by that action (Weick, 1988). Second, used more deliberately, actions can also test provisional understanding generated through prior sensemaking. For instance, Rudolph et al. (2009) described how medical residents took action to gather more information to help rule in or out plausible explanations for a patient's medical condition. Action and cognition are thus recursively linked: action serves as fodder for new sensemaking, while simultaneously providing feedback about the sense that has already been made. Third, actions shape the environment for sensemaking. This is because the same actions that help people make sense of what is happening can also alter what people encounter and, consequently, change the very situation that prompted sensemaking in the first place. The reciprocal influence between action and the environment during sensemaking is known as enactment, or "the process in which organization members create a stream of events that they pay attention to" Orton (2000, p. 231). Enactment is one of the aspects that differentiates sensemaking from interpretation. Enactment is premised on the idea that people play a key role in creating the

environment in which they find themselves (Orton, 2000; Weick, 1979, 1988, 1995, 2003; Weick et al., 2005). As Weick (1988) observes, "People who act in organizations often produce structures, constraints, and opportunities that were not there before they took action" (p. 306).

In this section, we focus on three streams of research that have expanded and extended our understanding of the roles of action and enactment in sensemaking. First, research on enactment during crises and unexpected events (Shrivastava, 1987; Weick, 1988, 1990, 2010) illustrates the trade-offs involved in taking action, which is necessary to generate more information but, especially in hazardous and rapidly changing situations, can alter the environment for sensemaking in unexpected ways. Second, research on temporary organizations (Bechky, 2006; Bigley & Roberts, 2001) provides concrete examples of how people can enact structures in their environment that facilitate sensemaking, highlighting the importance of role structures for shaping ongoing action and meaning making. Third, an emerging group of studies at a more macro-level shows an effect of actions generated through organizational member and observer sensemaking that extends well beyond the organizational boundary (Danneels, 2003; Porac et al., 1989; Weber & Glynn, 2006).

i) Crises and unexpected events.   Individuals and teams managing crises or unexpected events are faced with a dilemma. On the one hand, hazardous and rapidly unfolding situations are difficult to comprehend, so people want to gather more information to determine the most appropriate action. On the other hand, the demands of the situation often require them to take action with incomplete information. For instance, health care providers in the emergency department frequently care for patients who have an altered mental state (i.e. have dementia or have taken drugs) or who are completely unable to communicate (i.e. are unconscious) yet must still quickly diagnose and treat those patients with limited information (Christianson & Sutcliffe, 2009). Taking action during crisis thus involves a trade-off between "dangerous action which produces understanding and safe inaction which produces confusion" (Weick, 1988, p. 305).

The degree to which and the way in which actions shape the emerging crisis depends, in part, on how much agency actors have, how much interdependency and differentiation (LaPorte & Consolini, 1991) exists in the system, and how tightly or loosely coupled the system is (Orton & Weick, 1990; Weick, 1976). Enactment is complicated in loosely coupled systems. Tight coupling implies close and interdependent relationships between elements in a system—a change in one part of the system leads to a predictable change in another part. In loose coupling, the relationships between interdependent elements are much more difficult to discern and changes in one part of the system have a much less predictable effect on other parts of the system. Enactment gets even more unpredictable in complex systems, where effects can be

delayed and small actions can result in big and often surprising consequences. For example, during the 1997 merger of the Union Pacific and Southern Pacific railroads, a decision was made to centralize classification (the process of receiving and dispatching trains to various U.S. destinations) to Houston's main rail yard. This seemingly small change of moving classification from two rail yards just outside of Houston to the main rail yard in Houston set off a cascade of events: trains began to back up the next day, eventually gridlocking the rail system all the way back to Chicago (Weick & Sutcliffe, 2001).

Early actions in a crisis "do more than set the tone; they determine the trajectory of the crisis" (Weick, 1988, p. 309). Weick's (1988) study of Bhopal is a classic example of how early actions (taking a tea break) and inactions (explaining away and failing to investigate an elevated pressure gauge reading) can worsen an unfolding crisis: as action was delayed, the toxic gas continued to build up, culminating in an explosion that released the gas over an extensive area, killing thousands. Many of the ways in which action constrains future sensemaking are heightened during a crisis. For example, we know that people are much more likely to be committed to the explanations they have created to justify actions they have taken when their actions are public, volitional, and irrevocable (Salancik, 1977b). During a crisis, actions become much more public and irrevocable, strengthening commitment at precisely the time that flexibility and improvisation are required.

ii) Temporary organizations. In sensemaking, people must enact order into chaos (Weick et al., 2005, p. 411). Research on forming or collapsing organizations brings attention to the ways in which action creates structures that facilitate sensemaking. Organizations are always in the process of being created and re-created (Tsoukas & Chia, 2002) but this is especially true in temporary organizations, where nothing exists until organizing takes place. Film crews or emergency response teams are classic examples of temporary organizations, which are formed on an ad hoc basis and bring together individuals with specialized skills to work interdependently to address a complex challenge or task (Baker & Faulkner, 1991; Bechky, 2006; Goodman & Goodman, 1976; Meyerson, Weick, & Kramer, 1996). Role structures have emerged as a critical component of organizing under conditions of high ambiguity or uncertainty, including temporary organizations (Bechky, 2006; Bigley & Roberts, 2001; Meyerson et al., 1996). When role structures and groups disintegrate, panic can ensue, leading to the subsequent collapse of sensemaking (Weick, 1993). Below, we examine several ways that actors within temporary organizations can enact different types of role structures that facilitate sensemaking.

Large-scale emergencies—such as wildland fires, natural disasters, and multi-casualty accidents—require many different types of emergency responders to come together, make sense of an evolving situation, and swiftly coordinate their actions to address the crisis. For example, Bigley and Roberts (2001)

studied how the incident command system (ICS) was used by a large California fire agency to coordinate responses to forest fires. Although the ICS was characterized by a hierarchical organizational structure with extensive rules, procedures, and policies (Bigley & Roberts, 2001), it also offered exceptional flexibility in highly variable circumstances. For instance, within this clearly defined system, personnel could switch from one role to another as necessary, and authority migrated to those possessing the relevant expertise to address emergencies. Thus, the ICS—highly structured but inherently flexible—offers a structure that facilitates sensemaking, freeing actors from having to make sense of how to coordinate among themselves so that they can devote more resources to understanding the evolving situation.

An alternate model of flexible organizing is found in film crews that enact a role structure that facilitates sensemaking and coordination. Although film crews face different challenges than wildland fire crews, both types of temporary organizations require an ever-changing cast of team members, many of whom have never met, to make sense of and work together on a high-stakes, time-pressured task. Film crews must also manage unexpected events—for example, scripts re-written during filming, or accidents on set that delay production (Bechky, 2006). But, in contrast to the ICS model, where the role structure is imposed as an organizational framework, film crews negotiate role structures through a set of social practices, such as thanking, admonishing, and joking, that reinforce expectations about acceptable behaviors associated with roles. This continuous reinforcement of role expectations created and maintained a role structure that was stable for the duration of a particular project and served as a resource for future projects. Like the ICS, the clear role structure enacted by the film crews facilitates sensemaking and the management of emergent challenges.

       iii) Markets, fields, and institutions.   Since the seminal writing of the 1980s prompted management scholars to think about the enacted nature of organizational environments (Daft & Weick, 1984; Smircich & Stubbart, 1985), a growing number of studies have revealed how actions stakeholders take as part of their sensemaking help construct the operating environments of their organizations. For example, Anand and Peterson (2000) and Anand and Watson (2004) have shown how fields evolve and markets are enacted when groups of actors participate in activities that create certain sets of meaning. This research finds that actors in the commercial music industry are motivated to participate when their joint attention is drawn to sensegiving devices such as market information regimes (e.g. Billboard magazine's Hot 100 chart) or award ceremonies (e.g. the Grammy award) that provide important cues for sensemaking and a focal point for interaction about these cues. Initially, these cues allow participants to make sense of the performance of different products, but in making resource allocation decisions based on

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these data, they enact a market that determines the commercial success of these and future products by the same artists.

Focusing on the role of the media, Kennedy's (2008) study of emerging markets shows how news stories and press releases published about "not-yet-legitimate" firms enable the construction of a new market category through "market sensemaking". Specifically, he finds that the media constructed the market of computer workstations through the 1980s by discursively connecting early entrants to a small number of other new entrants. This helped audiences to make sense of what these little known firms did, creating the impression of a "sensible", emerging category. Furthermore, the new firms themselves then continued to enact the category as it was recognized, reducing references made to the rivals in their press releases.

Santos and Eisenhardt (2009) also examine the construction of a new market, pointing to the proactive role of entrepreneurs in "claiming" a market. In their study of nascent technology firms in Silicon Valley, these authors reveal important identity-based sensegiving activities, such as disseminating stories and signaling leadership in a field, that entrepreneurs use to construct a market for which their firms are seen as cognitive referents. This analysis reveals how institutional entrepreneurship can occur as a sensemaking process in which individual firms that are peripheral to the institutional field can enact new markets which they ultimately come to dominate. While institutional entrepreneurs can enact and subsequently dominate new markets, they can also destroy them. Such was the case of Washington Mutual, the bank that sought to become "the Walmart of banks" through its high-risk subprime loan business (Grind, 2012). Through a sequence of rapid acquisitions and increasingly poor lending practices, Washington Mutual ended up as the largest bank failure in American history, undermining the legitimacy of the category of high volume, low-barrier lending banks.

Nigam and Ocasio's (2010) study of Clinton's health care reform proposal explores sensemaking and the enactment of a new institutional logic. This event grabbed attention and triggered "environmental sensemaking", a process in which actors made sense not only of a triggering event (the health care reform proposal), but also of the organizational field at large (U.S. hospitals). Their study shows distinct shifts in how field actors talked about the health care sector between the early- and mid-1990s, prior to Clinton's election, arguing for political reform to address the systemic breakdown of the sector, but later constructing a narrative in which these problems had largely been addressed by market-driven reforms and the growth of a managed care system. Furthermore, we see how the term "managed care", initially associated with a specific organizational form, came to define the logic of the entire field, symbolizing the organizing principles for relationships between hospitals and a variety of other institutional actors.

Danneels' (2003) research on the apparel industry adds nuance to this literature by exploring the implications of loose and tight coupling on enactment at the field level. Examining enactment at the interface between the firm and customers at a wide variety of apparel retailers, Danneels shows how a firm's interpretations of its customers' responses to its retail mix led the firm to become increasingly customer-oriented, gradually adjusting its mix to better fit its customers. While this enactment cycle appears advantageous, the study reveals the problems caused as the cycle grew increasingly tightly coupled, with firms becoming more and more committed to core customers to the exclusion of other potential customers. The study thus suggests the benefit of balancing tight coupling (to understand core customer needs) with loose coupling (to expand the customer base and remain responsive to marketplace changes) in the enactment process. This work offers a particularly clear example of Weick's (1988) observation that, through enactment, organizations create the environments that then constrain them.

What Does Sensemaking Accomplish?

One of the significant ways in which sensemaking research has influenced organization studies is through work that shows how sensemaking enables other important organizational processes and outcomes. Here, we focus on three prominent bodies of research: those linking organizational sensemaking to strategic change (Gioia & Chittipeddi, 1991; Gioia et al., 1994; Nag et al., 2007; Yu et al., 2005), organizational learning (Christianson et al., 2009; Colville, Hennestad, & Thoner, 2013; Haas, 2006; Kayes, 2004; Thomas, Sussman, & Henderson, 2001), and innovation and creativity (Drazin et al., 1999; Hill & Levenhagen, 1995; Jay, 2013; Ravasi & Turati, 2005). While sensemaking has been linked to a variety of other outcomes (Conway & Briner, 2002; Gioia & Thomas, 1996; Morgeson, 2005; Roberson, 2006), these three bodies of research are particularly intriguing because they show that sensemaking, which is often thought of as an ordering force, also facilitates processes that require the disruption of order.

Strategic change. Earlier, we explored planned change interventions as triggers for sensemaking. The relationship between change and sensemaking is recursive, however, such that sensemaking by leaders and others also accomplishes strategic change. When leaders are successful in influencing the sensemaking of organizational members, these individuals are motivated to make changes in their own roles and practices; they are also able to help others by explaining the vision and co-constructing ways of working that are consistent with it (Corley & Gioia, 2004; Denis et al., 1996; Gioia & Chittipeddi, 1991). Middle managers' interpretations and actions are also critical in translating high level aspirations into local changes that underpin the vision and keep

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business going during the transition (Balogun, 2003; Balogun & Johnson, 2004, 2005). Actors thus create a new organizational order through sensemaking about structures and strategies that offer a plausible response to environmental changes; they also use sensegiving to convince others of the value of these changes and to explain how they can be implemented. Helms Mills (2003) adds another layer to our understanding of sensemaking in strategic change by highlighting the influence of interpersonal, sociocultural, and institutional contexts for sensemaking. Explaining the reasons behind the introduction of different change initiatives at a Canadian utility company and actors' different accounts of the same events, Helms Mills develops a model of sensemaking in organizational change that acknowledges the impact of power differentials among individuals. She shows that while sensemaking is the process through which new ways of thinking and acting become incorporated in organizations, the accounts that dominate and the practices that become accepted are products of negotiations undertaken in structures that privilege some actors over others.

When sensemaking or sensegiving fail, so too may a change initiative. In a longitudinal study of a post-merger integration process in a large health care system (Yu et al., 2005), the sensemaking by the focal unit's senior team was misdirected, with serious consequences. Over a period of several years, this team became preoccupied with making sense of internal administrative and integration issues, devoting little time to the challenge of external integration—that is, integration with other units within the health care system. As a result, problems deriving from unresolved external integration issues continued to distract them from improving patient care, which was the organization's core function, and a primary driver of the change initiative. Evidently, change programs can consume much energy with little positive gain when powerful sensemakers focus their attention on too narrow a set of cues. We also see the impact of failed sensemaking in Nag et al.'s (2007) study of an R&D organization where members were so invested in their understandings of what the organization was and in practices that supported that identity that it proved impossible to make the planned transformation to a market-oriented firm. In contrast, leaders' success in enabling a shared understanding of the need for change in an organization can prove problematic when priorities subsequently shift. This is evident in Mantere et al.'s (2012) study of the Nordic public sector organization in which employees struggled to construct a return to the status quo as positive after a proposed merger was called off.

Research thus shows that sensemaking at all levels of the organization is significant in producing (or inhibiting) change: when leaders are able to influence others to understand the future in ways consistent with their redefined reality, strategic change is instigated and can progress through cycles of leader and member sensemaking. In this way, sensemaking is used to create a new

order in the form of a guiding vision and new meanings for organizational members. However, when deterrents to sensemaking exist in the form of deeply embedded practices, sticky prior accounts, or top team attention that is focused on alternative issues, organizations struggle to engage a deep and lasting change process.

Learning.   Sensemaking is also an important process for learning in organizations, teams, and individuals. Several studies examine high risk or crisis contexts, where sensemaking is critical to learning from error. Christianson et al. (2009), for example, found that leaders' sensemaking in response to the sudden collapse of the roof of the B&O Museum onto priceless exhibits facilitated learning by reducing the ambiguity generated by the collapse, and by updating members' understandings of the organization's weaknesses and unrealized potential. This allowed the revision and strengthening of important organizational routines to better equip the organization for the future. Studies of air force pilots also reveal the value of sensemaking for learning from error (Catino & Patriotta, 2013; Ron, Lipshitz, & Popper, 2006). Catino and Patriotta's (2013) study of sensemaking in the Italian Air Force shows that the meaning pilots make of events leading to in-flight problems is fundamental to their learning, affecting whether and how they detect, report, and correct future errors. Ron et al. (2006) emphasize the importance of sensemaking oriented toward issues rather than individuals in after-flight reviews, maintaining the psychological safety that enables team learning. Kayes (2004) examined sensemaking in a case of a breakdown in team learning, in the 1996 Everest disaster in which eight climbers died. This occurred, he found, partly because of the climbers' failure to appreciate the ambiguity of the situation, continuing to work on the basis of prior beliefs rather than engage in sensemaking on the basis of new information.

A second set of studies has focused on the role of sensemaking in learning in more conventional contexts. For example, Haas' (2006) research on teams working in highly political, ambiguous, knowledge-intensive settings found higher performance for teams operating in conditions that enhanced their sensemaking capabilities (slack time, autonomy, and work experience). When these teams were not able to engage in sensemaking about the knowledge they had gathered, they failed to learn from it. This, Haas (2006) argues, is particularly significant in knowledge-intensive work settings, where there is often an abundance of problems and solutions, making it difficult not only to know which solutions are best, but also which problems are most important. In such uncertain contexts, team sensemaking about the material gathered and options available becomes critical. At the individual level, Ravasi and Turati's (2005) study of entrepreneurs found that sensemaking plays a vital role in the learning process that underlies innovation in entrepreneurial technology ventures. Consistent with research on expertise and problem solving (Day & Lord, 1992;

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Rudolph et al., 2009), the authors showed that when entrepreneurs had prior knowledge related to a venture, they were better able to make sense of the problems they faced and the probable risks and returns. This fed a self-reinforcing learning cycle, as entrepreneurs allocated more time and resources to projects they constructed as more promising, which in turn led them to upgrade their venture-related knowledge, and reduce the ambiguity associated with developing the product or service.

Together, this work suggests that sensemaking is especially critical to learning in environments where ambiguity is high, whether this is an acute situation resulting from a sudden disaster or a characteristic inherent to the operating context. Ambiguous contexts trigger sensemaking but are chronically hard to make sense of: cues are often unclear, actions muddy, and meanings equivocal. The relationship between actions and outcomes is also difficult to understand. Sensemaking in such circumstances, especially through rich media such as face-to-face communication (Daft & Lengel, 1986), engenders learning at all levels by enabling people to better understand themselves, their situation, and how to make sense in the future.

Creativity and innovation.   A small but growing body of work links sensemaking to processes of creativity (the production of novel ideas) and innovation (the successful implementation of creative ideas). While much research suggests that prior frames often prevent people from seeing a problem from different viewpoints or being able to change their perspective (Cerulo, 2006; Weick, 1988, 1993), Drazin et al. (1999) identify sensemaking as a positive force for creativity. Their multilevel model proposes that the creative process is driven by episodes of sensemaking in response to the crises that inevitably arise in any project carried out in a complex organization. Each of these sensemaking episodes produces a negotiated belief structure that persists until the next crisis, when the power balance shifts, different actors become engaged, and creativity is fueled through the new belief structures that emerge from multi-party sensemaking. Sensemaking, they argue, is the key mechanism through which the creative process progresses.

Looking beyond the creative process to innovation, Dougherty, Borrelli, Munir, and O'Sullivan (2000) show the importance of organizational sensemaking for innovative firms. Their comparative study of more and less innovative firms found differences in how people framed market and technology knowledge and the products and businesses to which this knowledge was linked. Those in innovative firms saw themselves as engaging in knowledge practices and business processes that were part of ongoing relationships with customers for whom problems were to be solved; they thus worked with a shared understanding of the goal on the same problem and readily interacted to make sense of unexpected issues. In contrast, people in less innovative organizations lacked a frame that encouraged collective sensemaking: they

understood market and technology knowledge as separate factors of pro-
duction, and their sensemaking reflected this siloed construction. Here, the
problem lay both in a general lack of intersubjective meaning making, and
in the kinds of understandings individuals formed of the problems they
encountered.

The relationship between sensemaking and innovation, as with change and
learning, is affected by the organizational context. In a study of a hybrid organ-
ization, Jay (2013) showed how sensemaking about paradoxical performance
outcomes built the organization's capacity for innovation. With a mission
emphasizing both public service and client service (business), the organization
was driven by competing logics, so that any outcome that could be understood
as a success through one lens was constructed as a failure through the other.
Members first oscillated between logics, grappling with the institutional com-
plexity (Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury, 2011), but sub-
sequently began to navigate the paradox more reflexively by engaging in
sensemaking both internally and with key external stakeholders. Through
these sensemaking processes, they reframed the organization's role and identity
from a "one-stop shop" to "laboratory", ultimately constructing it as a "cata-
lyst" that enabled innovative outcomes through the synthesis of the two see-
mingly incompatible logics. This kind of synthesis is also evident in
Christianson et al.'s (2009) case of the B&O Railroad Museum, which com-
bined a logic of conservation with a logic of creation to renew itself after the
disaster.

These examples suggest a consistent pattern regarding how sensemaking
enables creativity and innovation in organizations. Key to this link are sense-
making processes that actively engage actors in paradoxes and belief structures
generated by disruptive or unanticipated events. Sensemaking creates linkages
between elements of these equivocal frameworks that in turn allow the emer-
gence of novel accounts of the organization and ways of doing business that
trigger and facilitate innovation.

This pattern cuts across studies of change, learning, creativity, and inno-
vation. A clear theme emerging from this review is the importance of sense-
making in the development of novel understandings and practices in
organizations. This is surprising, since sensemaking is a process directed at
creating order from confusion and chaos, while strategic change, learning,
creativity, and innovation each involve breaking up the status quo and creating
at least temporary disorder. Yet, sensemaking is concerned with the construc-
tion of new meanings, and it is such new meanings that underpin new ways of
organizing and understanding. These are produced when individuals engage
with heterogeneous others and with competing elements of complex problems,
allowing connections to be enacted between seemingly disparate perspectives.
This in turn changes the challenges with which an individual, team, or organ-
ization contends, but also the lenses and sets of practices through which they

grapple with them. Thus, we see sensemaking at the heart of processes of change, learning, and innovation in organizations.

Moving Forward

In this final section, we first examine two important ontological differences evident from our review of the sensemaking literature, and explore their implications for future research. Second, we consider theoretical developments in the field over the last decade, and identify ongoing and new areas for study. Third, and finally, we discuss key methodological challenges and opportunities for sensemaking research, and suggest how these may be tackled.

Articulating and Bridging Ontological Differences

Our review of the literature reveals considerable convergence on key aspects of sensemaking but also draws attention to some important areas of difference. These include questions about two aspects of sensemaking—where sensemaking takes place and when sensemaking occurs—which reflect fundamentally different assumptions about the nature of sensemaking. First, as we highlighted earlier, scholars locate sensemaking in different places: some regard it as a primarily cognitive process that takes place largely in individuals' heads, and others see it as process of social construction that is carried out through interaction between people. Second, there is growing discussion about the temporal orientation of sensemaking. Traditionally, sensemaking has been seen as a retrospective activity, one that can occur only as one looks back over action that has already taken place. In recent years, however, there has been increasing interest in the possibility of "prospective" or "future-oriented" sensemaking.

These different assumptions about the nature of sensemaking have important consequences for sensemaking research. Differing treatments of sensemaking situate their work in disparate literatures, examine alternate mechanisms through which sensemaking is accomplished, and suggest different outcomes of sensemaking. We briefly outline these areas of disagreement, emphasizing the implications for theory development that crosses levels of analysis and connects the past, present, and future.

Where sensemaking takes place—the ontology of sensemaking. The individual approach to sensemaking is typically grounded in the social cognition literature and examines various frameworks—such as schema, schemata, interpretive schemes, mental maps, or representations—on which individuals draw to make sense of situations (Bingham & Kahl, 2013; Fiss & Zajac, 2006; Harris, 1994; Hill & Levenhagen, 1995; Kaplan, 2008; Kiesler & Sproull, 1982; Labianca et al., 2000; Starbuck & Milliken, 1988). This line of research tends to foreground cognition and focuses on how individuals interpret and respond to

occasions for sensemaking. For instance, Labianca et al. (2000) used the construct of schemas, which they defined as "cognitive frameworks that give meaning to experience", to explore how employees made sense (and frequently resisted) management's attempt to empower employees as part of an organizational change project. The sense that is made is also discussed in the same cognitively based terms, so that, for example, sensemaking leads individuals to develop new schemas (Bingham & Kahl, 2013) or changed interpretive schemas (Bartunek, 1984).

In contrast, the social constructionist approach to sensemaking has its roots in the symbolic interactionist literature and increasingly in discursive analyses of organizations. From this perspective, "sensemaking occurs and can be studied in the discourses of social members—the intersubjective social world—rather than simply occurring in their minds" (Gephart, 1993, p. 1470) and is concerned with the "conversational and social practices (methods) through which the members of a society socially construct a sense of shared meanings" (p. 1469). This approach thus situates both the process of sensemaking and its outputs in spoken language or written texts. This is how we, as scholars, understand sensemaking, and hence our focus, in the earlier discussion of the construction of intersubjective meaning, on the body of research that locates sensemaking in the talk of organizational actors, examining their use of language (Sonenshein, 2006; Taylor & Robichaud, 2004), their discursive competence (Maitlis & Lawrence, 2007; Rouleau & Balogun, 2011), their narratives (Boje, 2001; Brown et al., 2008; Patriotta, 2003) and the role of specific rhetorical tropes (Cornelissen et al., 2008; Musson & Tietze, 2004). Through these discursive processes, sensemakers are understood to produce "accounts", "narratives" or "stories" rather than new schemas (Boje, 1995; Brown, 2004; Maitlis, 2005; Martens, Jennings, & Jennings, 2007). These accounts are co-constructions, but need not reflect widespread agreement in the collective. Indeed, as noted earlier, studies in this vein reveal that meaning in an organization is best captured by a multiplicity of stories.

Conversations about sensemaking can be informed by a variety of perspectives but those conversations are made more intelligible when scholars are clear about their ontology. This is especially important for understanding collective dynamics and the development of collective understandings in organizations. If sensemaking occurs within a person's head, then collective sensemaking in organizations becomes a process through which more influential individuals episodically persuade others to think as they do. Collective sensemaking may pause when enough members hold the same understanding to act together. If sensemaking takes place in the conversations between people, collective sense is generated in an ongoing, iterative manner, as actors shape each other's meanings in repeated cycles of sensemaking. Collective sensemaking may pause when enough members engage in a discourse that allows them to

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act together. Given the diversity of research in this field, we do not anticipate consensus on where sensemaking takes place (Floyd, Cornelissen, Wright, & Delios, 2011; Hirsch & Levin, 1999). However, we encourage scholars, especially when they seek to cross levels of analysis, to better specify how they are approaching sensemaking, by defining key terms, articulating underlying assumptions, and specifying boundary or scope conditions of the theory they develop (Suddaby, 2010). This will facilitate stronger theorizing, identifying where fruitful connections lie, and illuminating areas to be bridged or further debated (Weick, 1995).

When sensemaking takes place—the temporal orientation of sensemaking. A second set of disparities in the literature concerns the role of temporality and sensemaking, particularly whether sensemaking is inherently retrospective or whether it can also be prospective or future-oriented. Classic work on sensemaking has framed it as a retrospective process; indeed "retrospective" is one of Weick's (1995) core characteristics of sensemaking. The notion of prospective sensemaking, "the conscious and intentional consideration of the probable future impact of certain actions, and especially nonactions, on the meaning construction processes of themselves and others" (Gioia et al., 1994, p. 378) has long been part of the literature, although only in recent years has it begun to garner more attention. Gioia subsequently moved away from this kind of future-oriented sensemaking (Gioia, 2006; Gioia, Corley, & Fabbri, 2002), supporting Schutz's (1967) and Weick's (1969) arguments that forward-looking sensemaking involves "future perfect" thinking, such that "people envision a desired or expected future event and then act as if that event has already transpired, thus enabling a 'retrospective' interpretation of the imagined event" (Gioia et al., 2002, p. 623). However, some recent research has returned to the idea of sensemaking that is oriented toward the future (Gephart et al., 2010), seeking to create more elaborated models of sensemaking that take into account the past, present, and future (Kaplan & Orlikowski, 2013; Wiebe, 2010).

Those promoting a more holistic temporal perspective on sensemaking argue that a focus only on its retrospective aspects neglects the historical arc or temporal embeddedness of sensemaking (Kaplan & Orlikowski, 2013). For example, Gephart et al. (2010) propose that future-oriented sensemaking (constructing meanings that create images of the future) is embedded in past and present temporal states and uses past and present temporal orientations to provide contexts for proposed future entities. Consistent with these ideas of embedded temporalities, Stigliani and Ravasi (2012), in their study of design teams, theorize that prospective sensemaking is based on interrelated cycles of retrospection. Wiebe (2010) argues more generally for a broader temporal basis to sensemaking. His examination of "temporal sensemaking" in organizational change found that people make sense of the timing and pace

of their experiences, constructing the "same" mandated change through very different temporal lenses. This led to accounts of the change that ranged from "no change" to "massive and unrelenting change" (Wiebe, 2010). He concludes that a conception of sensemaking as retrospective ignores the present, which is where sensemaking takes place, but that engaging in sensemaking in the present involves drawing on all three dimensions of temporality.

While scholars still debate the meaning and distinctiveness of a truly prospective form of sensemaking, we believe that the discussion around the temporal orientation of sensemaking could valuably prompt a broader consideration of other temporal aspects of sensemaking. The literature diverges on whether sensemaking takes place continuously or in an episodic fashion. One stream of research—grounded in ethnomethodology—asserts that sensemaking is always taking place, without beginning or end. Gephart et al. (2010, p. 281) summarize the ethnomethodological perspective on sensemaking: "The sensemaking practices and the production of social reality are ongoing and continually enacted . . . there is no time out for sensemaking." This view of sensemaking differs in important ways from the depiction of sensemaking as an episodic process, carved out from the "infinite stream of events and inputs that surround any organizational actor" (Weick et al., 2005, p. 411). Within any episode of sensemaking there is a process of continuous adjustment as sense is made and remade. Weick et al. (2005) describe this process of "progressive approximations" in refining sensemaking as the "redrafting of an emerging story so that it becomes more comprehensive, incorporates more of the observed data, and is more resilient in the face of criticism" (p. 415). Although epistemological differences regarding the nature of sensemaking may not be resolved, a more detailed examination of its temporality, whether or when sensemaking starts and stops, and how sense is made and remade will greatly enrich our theorizing.

Theoretical Opportunities

The study of sensemaking has come a considerable way since Weick et al.'s (2005, p. 417) observations that, given the "modest amount of empirical work on sensemaking that has accumulated so far . . . [A]almost any kind of work is likely to enhance our understanding". Weick et al. do, however, identify four broad domains as especially valuable for future research: the intersection of sensemaking with each of power, emotion, and institutional theory, as well as the study of "distributed sensemaking". More recently, in a review of sensemaking research on crisis and change, Maitlis and Sonenshein (2010), highlighted the need for scholars to attend more closely to the politics of sensemaking, and to its embodied nature. In this final section of the chapter, we assess how scholarship has progressed in these areas, and identify research priorities going forward. In brief, we see the greatest areas of growth in studies

investigating power and political aspects of organizational sensemaking, and an increasing acknowledgement of the emotional qualities of sensemaking processes. Important early steps have also been taken toward understanding the embodied nature of sensemaking. Less work has been done on distributed sensemaking or connecting sensemaking and institutional theory.

Power and politics in sensemaking.   While at times still criticized for its inadequate attention to power (Helms Mills, Thurlow, & Mills, 2010; Marshall & Rollinson, 2004), sensemaking research has become less politically naïve since Weick et al.'s (2005) observations nearly a decade ago. Much more common now are analyses that recognize the multiple competing accounts present in organizations, and explore the political processes through which some interpretations become legitimate while others "evaporate" (Maitlis & Sonenshein, 2010, p. 571). Some of this work was discussed earlier in this chapter, both narrative studies on the construction of intersubjective meaning in organizations, and other discursive analyses, especially in the context of organizational change (Brown et al., 2008; Currie & Brown, 2003; Helms Mills, 2003; Humphreys & Brown, 2002; Mantere et al., 2012; Monin et al., 2013; Patriotta, 2003; Sonenshein, 2010). Other writing on narrative and antenarrative in organizations (Boje, 1995; Vaara & Tienari, 2011), as well as Gephart and Brown and colleagues' work on post-crisis inquiries (Brown, 2000, 2005; Brown & Jones, 2000; Gephart, 1984, 1993) also make visible the power struggles inherent in collective processes of meaning construction. All of these works vividly convey the tussles and tensions of organizational sensemaking, as different parties campaign and compete to shape meanings of and in the organization, gain acceptance for a preferred account, or subvert the status quo. Such analyses also show the importance of a variety of sensemaking resources, of which formal authority is only one. Indeed, individuals and groups with little formal power can exercise significant influence through the narratives they share.

While this work captures political processes at play between organizational stakeholders, less acknowledgement has been given to the influence of macrosocial structures on sensemaking in organizations (Taylor & Van Every, 2000). From a critical management perspective, for example, sensemaking could be regarded as unfolding in an improbably hyper-agentic environment, where individuals, drawing on identity resources, notice, and act on cues, freely share their emerging accounts with available others, and enact new, sensible environments as they do so. Quite overlooked, or certainly underplayed, are the social, cultural, economic, and political forces that shape what groups will notice, how they can act, with whom they interact, and the kinds of environments that can be collectively enacted. Analyses that explore the constitutive effects of macro-level discourse on sensemaking within and across organizations would valuably add to the field, as have the relatively rare

studies that consider the mutually constitutive relationship between field-level discourses and sensemaking (Cowan, 2013; Fiss & Hirsch, 2005). Indeed, it is striking that sensemaking is so rarely considered in the rapidly proliferating field of discourse and institutions (Hardy & Maguire, 2010; Maguire & Hardy, 2009; Phillips, Lawrence, & Hardy, 2004), despite dominant conceptualizations of sensemaking as a discursive practice, and calls to connect the study of sensemaking and institutions. The opportunity to advance our understanding of power and sensemaking is still considerable.

Sensemaking as an emotional process. As noted earlier, most current accounts of sensemaking describe sense as constructed in language and shared through narrative. Little attention was previously paid to the emotional qualities of sensemaking: at best, emotion was reduced to the autonomic arousal experienced when an unexpected interruption occurs, and often seen as an impediment to sensemaking (Weick, 1990, 1995). In recent years, however, we have seen an interest in better understanding emotion as a part of the sensemaking process, at both individual and collective levels (Dougherty & Drumheller, 2006; Holt & Cornelissen, 2013; Maitlis et al., 2013; Myers, 2007; Rafaeli & Vilnai-Yavetz, 2004; Walsh & Bartunek, 2011). Maitlis et al. (2013), for example, develop a model of the role of individual emotion in the sensemaking process, showing how negative and moderately intense felt emotions are most likely to signal the need for and provide the energy that fuels sensemaking in organizations. They also consider how different kinds of emotion shape two key dimensions of the sensemaking process, and explore the critical role of emotion in enabling the plausible accounts that conclude sensemaking. At the team level, Rafaeli, Ravid, and Cheshin (2009) propose that team mental models develop through a reciprocal relationship between sensemaking and emotion, with interpretations of a situation evoking emotions that shape subsequent interpretations and actions. Furthermore, they argue that positive emotions in a team are likely to lead to higher quality team mental models, and that these models will be shared to a greater extent among members. Some support for these arguments can be seen in Liu and Maitlis' (2014) study of expressed emotion in senior team strategizing. This empirical study shows the recursive relationship between the emotional dynamics of team discussions and the way that members interpret and enact strategic issues they face. The authors find that positively valenced emotional dynamics enable discussions in which members engage in deeper sensemaking and greater agreement about an appropriate course of action, while emotional dynamics that are mixed or negatively valenced are associated with more superficial sensemaking and a failure to act collectively. At the organizational level, Bartunek, Rousseau, Rudolph, and DePalma (2006) and Walsh and Bartunek (2011) have shown how members' shifting emotions during important organizational change processes significantly shape their experience

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of the change through sensemaking processes that are often action-driven and emotion-fueled. In a very different setting, Cornelissen, Mantere, and Vaara (2014) found that emotional arousal and contagion shape sense-making in an anti-terrorist police operation leading to the accidental shooting of an innocent civilian. Although such empirical work on sensemaking and emotion is still quite scarce, emotions are increasingly understood to be a part of the sensemaking process, influencing whether sensemaking occurs, the form it takes, when it concludes, and what it accomplishes. We call for further research in this area, especially at the team and organizational levels.

   Embodiment and sociomateriality in sensemaking. Another emergent focus in recent years is the embodied nature of sensemaking, and a related stream of work on sociomateriality and sensemaking. While work in this area is much rarer than that on emotion, some recent studies have begun to change the way sensemaking is conceptualized. This work arises out of critiques of sensemaking as a "rational, intellectual process" (Cunliffe & Coupland, 2012, p. 65) that ignores its embedded and embodied nature, and observations such as Orlikowski and Scott's (2008, p. 466) that, in organization studies, "attention has tended to focus on … processes of sensemaking and interaction with little recognition of the deeply constitutive entanglement of humans and organizations with materiality". Each of these perspectives is associated with studies taking a broader, richer approach to the study of sensemaking, one that more explicitly incorporates the felt senses, the physicality of material cues and artifacts, or in some cases both.

   Cunliffe and Coupland (2012), for example, argue that the lived experience of sensemaking is best captured through the notion of "embodied narrative sensemaking", by which they mean that people make sense of themselves and their lives through felt bodily experiences and through a "sensing" of their surroundings in the course of ongoing, everyday interactions. Their study of sensemaking about a surprising event that occurred during a British and Irish Lions rugby tour highlights physical, even visceral, aspects of the sensemaking process—analyzed from a documentary that allowed close scrutiny of players' body gestures, facial expressions, and the physical positions of different team members in relation to each other. Taking a key moment from the film, the authors show that a central actor's sensemaking "is not necessarily an information-processing activity but draws on an intuitive and informed feeling in his body" (Cunliffe & Coupland, 2012, p. 77). Emphasizing sense made through "the totality of our experience", Cunliffe and Coupland (2012, p. 78), thus draw a sharp contrast with traditional perspectives that locate sensemaking purely in the mind or in language.

   Whiteman and Cooper's (2011) research brings together an emphasis on the felt sense (or felt sense*s*, through different modalities) and the part of

materiality in the sensemaking process. In their analysis of sensemaking in harsh physical environments, the authors focus on the extraction of material cues from the natural environment, which they refer to as "ecological sense-making". Drawing attention to the importance of ecological materiality in sensemaking, they show how attending to materials such as black ice and vegetation, as well as to conditions such as the wind and slope of the ground, significantly shaped actors' interpretations of, and actions in, highly equivocal and dangerous situations. Moreover, the authors suggest that those who are "ecologically embedded" (more physically and culturally rooted in the land) are more attuned to changes in ecological conditions. By accessing a richer repertoire of cues and consequences, therefore, they are better able to make sense of their changing situation.

Stigliani and Ravasi (2012) offer further insights into materiality and sensemaking through their ethnographic study of product design in a U.S. consulting firm. Analyzing the interactions within three design teams, the authors find that collective sensemaking emerges out of a combination of material and conversational practices. Specifically, they show how members used an enormous array of physical artifacts, such as magazine images, cards, sketches, and maps, at each stage of the sensemaking process to build, articulate, and elaborate their understandings of the products they were designing. These artifacts played a unique role in the process, making cues and "fragments of interpretations" permanently available, and providing external repositories for team members' emerging connections. Moreover, because of the artifacts' durability, members did not need to rely on memory in order to re-use ideas expressed earlier in the process; they were always there, accessible to all, and in concrete forms that could be rearranged and recombined as required. In this way, the authors reveal not only the crucial and quite unique role that material practices have in sensemaking, but also how material artifacts significantly enable the transition from individual to group-level sensemaking.

Interest in sociomateriality, in particular, in the roles of place and space in sensemaking, is also emerging in some institutional level research. This is evident both in recent work on field-configuring events that highlights the importance of settings such as tradeshows, conferences, and technology contests for collective sensemaking (Anand & Jones, 2008; Glynn, 2008; Oliver & Montgomery, 2008; Zilber, 2007), and in studies of "free spaces", small-scale settings outside the dominant group's direct control that allow interaction beyond that involved in daily work, thereby enabling institutional change (Kellogg, 2009). We are only just starting to understand sensemaking as an embodied process, and one in which sociomateriality plays a much greater role than we have to date recognized. We strongly encourage further scholarship in this area.

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Sensemaking as a distributed process.   Weick et al.'s (2005) call for further research on distributed sensemaking is rooted in the debate, mentioned earlier, concerning the possibility and importance of "shared understanding" in organizations, and in particular, how individuals who hold different pieces of information are able to collectively construct new meaning. This is an important question in collective sensemaking that appears to have been relatively little pursued. The few studies that have sought to address it, however, make important contributions to our understanding of how sensemaking occurs in groups, organizations, and communities.

Weick's (2005) analysis of the Centers for Disease Control's (CDC) diagnosis of the West Nile virus provides a powerful example of the challenges inherent in distributed sensemaking. The emergence of this unknown disease in New York City (NYC) represented a non-routine problem, characterized by equivocal cues and much ambiguity. Several people (and many birds) died as the CDC offered an initial (mis)diagnosis, and then, alongside others (including the NYC Health Department, several laboratories across the country, and a pathologist at the Bronx Zoo) tried to make sense of the problem over the following weeks. Each party worked to diagnose the disease based on the available cues and what they learned through different tests, and through the activation of their networks. For a variety of reasons, however, including the CDC's identity as "expert" rather than "integrator", and the relatively poor interconnectivity among the different groups, these parties' work and their emerging understandings remained largely independent, engendering the normalization of equivocal cues and the fixation on a plausible early account, in this case the misdiagnosis of the disease as St Louis Encephalitis.

In contrast, Kendra and Wachtendorf's (2006) examination of the waterborne evacuation of Lower Manhattan on 9/11 reveals a case when distributed sensemaking enabled an effective crisis response. Here, a large number of individuals, mostly unknown to each other and physically separated, enacted a collective response—rooted in an emerging sense of the problem they faced and what they could do to address it—to an ambiguous and rapidly unfolding crisis. Their collective accomplishment was the evacuation of 500,000 commuters by "an ad hoc flotilla of ferries, tugs, workboats, dinner cruise boats and other assorted harbor craft" (Kendra & Wachtendorf, 2006, p. 2). While the Coast Guard played a valuable role in managing the water traffic, this was not a centrally controlled or coordinated initiative: even before the Coast Guard called for assistance from boats in the harbor, many were already interpreting the unfolding events and asking for permission to approach, or simply starting to do so. In contrast to the weak interconnectivity seen in the West Nile virus case, the authors describe this "pastiche of coordinated, loosely-coordinated, and independent efforts" (Kendra & Wachtendorf, 2006, p. 6) as a "responsive affiliation" between distributed individuals, groups, and organizations that developed working relationships that met the

needs of the situation as they were defined. What made this possible was in part the involvement of different actors with compatible identities (e.g. boat operators) but also that many of those actors drew on different identities in enacting the situation (e.g. as boat operator who evacuates people by water but also as ironworker who cuts away fences on a pier so people can safely board) as different cues became salient and their understandings of the situation shifted. Connected to identity was the knowledge base individuals shared, allowing them to anticipate the capabilities, limits, and needs of unknown others. As the authors note,

> the participants began as disaggregated elements, but their sense was kindled by an extraction of cues read through a set of possible identities. Collectively, they inducted new meaning, re-defining their identities and their roles. They became not just tugboat captains, yacht owners, or waterfront workers, but emergency responders. (Kendra & Wachtendorf, 2006, p. 31)

Building on the example of the change made by cutting down the fences along the waterfront, the authors also highlight the importance of the physical environment as a sensemaking resource, both for storing and distributing sense.

This has echoes in Whiteman and Cooper's (2011) analysis of ecological sensemaking, and also in Stigliani and Ravasi's (2012) examination of materiality in design team project work. We explained earlier how the many physical artifacts used in the design process provided valuable resources in the sensemaking process; now considering their case from a distributed sensemaking perspective we see how new concepts were produced and infused with meaning as team members manipulated the artifacts, organizing and rearranging concrete cues in ways that allowed them to define the attributes associated with emerging categories. These findings are consistent with a recent study of distributed sensemaking in an online task requiring the generation of knowledge maps which individuals needed to create either from scratch or from a map that had iteratively been modified by four other users (Fisher, Counts, & Kittur, 2012). Participants in the experimental study were quicker in creating a map, and believed it to be of higher quality, when they used iterated maps rather than working from scratch, finding the structure of the iterated map more helpful than its content. Each of these studies provides evidence that, through some form of collaborative engagement with material artifacts, individual team members are able to jointly construct—or collectively induce, as Weick et al. (2005) would have it—new meanings. Understanding distributed sensemaking can only become more of a priority as spatial and temporal distances between organizational members increase; this is an area of research that will greatly benefit from the increasing diversity and sophistication of research methods, as we outline at the end of the chapter.

Sensemaking and institutions. Despite Weick et al.'s (2005) observations about the dearth of research linking sensemaking and institutional theory, and Weber and Glynn's (2006) subsequent thought-provoking discussion of institutions as key mechanisms in priming, editing, and triggering sensemaking, there continues to be surprisingly little empirical research at the intersection of these two important fields. To some extent, their interconnection is assumed: as Weber and Glynn (2006) observe, institutions are primarily understood to provide a constraint on sensemaking, shaping what we expect or take for granted, and thus restricting the substance of sensemaking (Barley & Tolbert, 1997; Zucker, 1991). Emerging research has shown that the influence in this relationship also flows the other way. As we saw in the earlier discussion of action in sensemaking, institutions have been studied as a product of collective sensemaking, constructed by sets of stakeholders as they attend to, discuss, promote, and perpetuate a clustering of certain actors and activities in the field (Danneels, 2003; Nigam & Ocasio, 2010; Santos & Eisenhardt, 2009). Only a very little research has, however, moved much beyond showing the two sides of this recursive relationship. Few studies have empirically explored Weber and Glynn's (2006) proposed mechanisms, and fewer still have taken up their call to examine which types of institutions become salient in sensemaking processes, or the social feedback processes which lead some institutions to become enacted while others are not.

There have, nevertheless, been some interesting studies over the last decade that connect sensemaking and institutions. These include Zilber's (2007) analysis of stories as sensemaking devices in institutional entrepreneurship, revealing that actors' accounts of what happened and why in the dot-com crash played a powerful part in the framing, justification, and legitimation of new or renewed institutional order, and Schultz and Wehmeier's (2010) analysis of the institutionalization of corporate social responsibility within corporate communications, which emphasizes processes of "translation" over "diffusion" in the interpretative acts inherent to institutionalization. Other studies have examined the intersection of institutions, sensemaking, and identity. For example, in a study of worker identity formation at a Fiat green field site, Patriotta and Lanzara (Lanzara & Patriotta, 2007; Patriotta & Lanzara, 2006) show the role of worker sensemaking, embedded in regulative and constitutive institutional influences, both in shaping workers' identity, and in precipitating its subsequent erosion and collapse. In contrast, Leung, Zietsma, and Peredo (2013) explore how contented Japanese middle-class housewives, engaging in their everyday activities, expanded their institutionalized role-identity and ultimately changed that institution. First, they did this purely through efforts to better perform in their traditional roles. Later, however, as they encountered problematic situations, change occurred through the women's engagement in cycles of

collective action, learning, and sensemaking about the boundaries of their role and themselves in that role.

Each of these studies gives sensemaking a central role in institutional change, highlighting how organizational stakeholders' ongoing reinterpretations of their institutions and the institutional practices in which they engage produce shifts in the very institutions they reproduce. While sensemaking thus appears influential, it is often not purposive: actors do not act with the intention of changing an institution. This is different for those engaged in sensegiving, attempting to influence others' sensemaking about an institution. Earlier in this chapter we saw how entrepreneurs who give sense by disseminating stories and signaling leadership in a field, construct a new market in which they claim a prominent place (Santos & Eisenhardt, 2009). As Navis and Glynn's (2011) study of the emergence of the U.S. satellite radio market shows, the legitimation of a new category occurs through processes of sensegiving by those inside the nascent category and sensemaking by the interested outside audiences. Their work reveals the impact of different kinds of accounts promulgated by category actors, for example, identity claims both constructing the category's collective identity and helping to differentiate firms within the category, and linguistic frames giving the category meaning and conveying differential gradients of membership within the category. Sensegiving is also evident in the process of "theorization" (Strang & Meyer, 1993), an important mechanism in field-level change (Greenwood, Hinings, & Suddaby, 2002; Maguire, Hardy, & Lawrence, 2004). Although these authors do not use the term "sensegiving", this practice appears central to the two key elements of theorization that they identify—framing problems and justifying innovation—which involve the "rendering of ideas into understandable and compelling formats" (Greenwood et al., 2002, p. 75) to diffuse innovation in institutional fields. Furthermore, Maguire et al. (2004) show the importance for theorization of arguments that successfully translate the interests of diverse stakeholders and mobilize political support, a finding that has echoes in Rouleau's (2005) (Rouleau & Balogun, 2011) discussion of sensemaking and sensegiving as situated discursive practices. Seen through a neo-institutional lens, sensegiving thus becomes a form of institutional work, "the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions" (Lawrence & Suddaby, 2006, p. 215). All of this suggests the presence of parallel conversations in sensemaking and institutional theory that, if more often connected, would benefit the study both of sensemaking and institutions.

Methodological Challenges and Opportunities

Deciding how to study sensemaking is itself an exercise in sensemaking (Allard-Poesi, 2005) and often poses a challenge to scholars as its interactive, emergent, and evolving aspects can be difficult to observe and capture. In keeping with

trends in how scholarly knowledge accumulates over time (Colquitt & Zapata-Phelan, 2007; McKinley, Mone, & Moon, 1999), initial research on sensemaking was more focused on theory development, but there is an increasing focus on theory testing and extension. As the questions we ask about sensemaking become more nuanced and complex (Weick et al., 2005), the methods that we use to study it will, correspondingly, need to capture that nuance and complexity. Our review of the literature identified a number of fruitful avenues for further research. Here, we consider several promising methodological trends that may enhance our inquiry: gathering fine-grained process data, studying multiple instances of sensemaking, and drawing on a wider range of methods.

Capturing the process.   Much of our understanding of how sensemaking is accomplished and what sensemaking helps to accomplish comes from data that provide revealing descriptions of the sensemaking process as it unfolds over time. Many of the established methods used to study sensemaking—such as case studies, ethnographies, and textual analysis—draw upon rich qualitative data, including interviews, observations, and archival data, to illustrate the process of sensemaking (Gephart, 1993; Gioia & Chittipeddi, 1991; Gioia et al., 1994; Maitlis, 2005; Weick, 1988, 1993). In addition to these established methods, we see value in less commonly used methods that produce even more fine-grained process data for studying sensemaking. For example, Whiteman's first-hand account of slipping on black ice on the rocks, falling into the icy river, and almost being swept into the rapids provides a level of detail about ecological sensemaking that would not be possible without her (inadvertent) autoethnography (Whiteman & Cooper, 2011). Likewise, researchers who engage in participant observation are able to provide first-hand accounts of their own sensemaking experiences as well as the observed sensemaking of others (Bechky, 2006). Similarly, the insider–outsider approach combines the insight of a knowledgeable participant–observer within the organization (often one of the researchers) with the fresh perspective of an outside researcher (Gioia et al., 1994; Rerup & Feldman, 2011). Another approach for studying fine-grained process data comes from recording sensemaking as it is accomplished in real-time. A number of methods—including conversation analysis, discourse analysis, and especially microethnography—can be used to reveal how participants make sense from moment to moment, exploring both hidden qualities of the unfolding process and how it relates to team work, coordination, and strategizing processes (Brown, 2000; Christianson, 2014; Cooren, 2004; Hindmarsh & Pilnick, 2007; Liu & Maitlis, 2014).

Capturing patterns across contexts.   Single-case studies feature prominently in the sensemaking literature, in part because this research design is well suited for studying both everyday and extreme examples of sensemaking (Yin, 2003). While this design provides a deep insight into a particular instance of sensemaking, it

makes it more difficult to compare patterns across contexts to specify potential boundary conditions on theory (Eisenhardt & Graebner, 2007). As our knowledge of sensemaking grows and scholars continue to test and elaborate theory, methods that compare multiple instances of sensemaking, either within the same organization or across organizations, can provide an additional theoretical insight. As an example, Kaplan and Orlikowski (2013) used an embedded case design to study multiple instances of sensemaking within the same organization so that they could compare and contrast how members of five different project teams engaged in temporal work around sensemaking—that is, how team members negotiated and resolved competing interpretations of what might happen, what was currently happening, and what had happened in the organization. This comparative approach allowed the authors to explore how the intensity of the temporal work related to the degree of change associated with each project, generating a theoretical insight that would not have been possible in a single-case study design. Similarly, Maitlis' (2005) exploration of sensemaking around the same nine issue domains in three symphony orchestras allowed her to identify different forms of organizational sensemaking that varied by issue and by organization.

Applying new approaches.   Finally, we encourage sensemaking researchers to draw on a wider range of methods to study sensemaking. Some early sensemaking scholars used mixed methods to investigate different kinds of questions (Gioia & Thomas, 1996; Putnam & Sorenson, 1982) but this has been less common in recent times. Novel methods have emerged, however, which provide new ways of examining long-standing sensemaking questions. For example, Rudolph et al. (2009) used mathematical modeling, an uncommon technique in the study of sensemaking, to examine the dynamic relationship between noticing cues, creating plausible explanations, and taking action to test those explanations. This method allowed them to model each parameter separately and develop theory around boundary conditions under which sensemaking was likely to be effective or ineffective. New methods can also facilitate the study of new questions. Our earlier discussion highlighted power and institutions as important areas for future research and such work may call for methods more frequently used to study those topics. An example is social network analysis, seen in Oliver and Montgomery's (2008) investigation of collective sensemaking at a field-configuring meeting of Jewish lawyers, and Vardaman's (2009) study of the relationship between individual and organizational sensemaking in the implementation of public policy on childhood obesity.

Conclusion

Looking back over earlier reviews of the field and recommendations for future scholarship shows the considerable advances that sensemaking research has

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made in the last decade. There has been a burgeoning of empirical research in diverse organizational contexts, examining sensemaking by and between actors at different levels of the organization. Scholars now study how meaning is made in response to relatively minor surprises or ambiguities as well as major disasters, recognize the role of emotion as well as cognition, talk, and other kinds of action in the sensemaking process, and appreciate the challenges of constructing accounts that are widely shared across a collective. Initial forays have been made to examine embodiment and sociomateriality in sensemaking, and to link sensemaking processes to institutions and other macro-social structures. We encourage more work in these latter domains, and believe several fields would benefit from rigorous research that connects sensemaking to other important team and organizational processes.

While the present review identifies many valuable sensemaking accomplishments, there are some notable absences. Above, we discussed what remains a very limited body of work on sensemaking and institutions. In addition, despite the self-evident link between sensemaking and attention, there is very little research that examines their relationship (cf., Hoffman & Ocasio, 2001; Nigam & Ocasio, 2010 for important exceptions). There is also strangely little work that links sensemaking and routines, notwithstanding research showing routines to be a significant source of change in organizations (Feldman, 2000; Feldman & Pentland, 2003; Rerup & Feldman, 2011). There are also significant gaps in research at the team level, with fewer studies of team sensemaking in general, and especially research examining the relationship between sensemaking and key team processes, such as coordinating, decision making, and strategizing.

At the same time as encouraging research in each of these areas, we offer counsel. "Sensemaking" is a much used concept, and one for which usage is growing. A search within just one management-related database (ProQuest) identifies over 4000 scholarly journal articles containing the word "sensemaking"; a Google Scholar search finds over 70,000 references. In the academic literature, scholars use the term very differently, even within the field of organization studies, and even when citing Weick's seminal works. While this is not surprising, it is also not very helpful in advancing our knowledge of the field. Furthermore, the last decade has seen something of a proliferation of sensemaking-related constructs, which are not always clearly defined. We believe that we will understand more about sensemaking and what it enables in organizations if we study the same central process, albeit in different ways, with different actors, in a variety of contexts. In this way, our research stands to reveal more of the qualities, tensions, and challenges of sensemaking, as well the other processes it enables at and across different levels.

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Acknowledgements

Endnotes

1. Weick (1995) observes that "interpretation" and "sensemaking", while often used synonymously, are in fact quite different: sensemaking involves "authoring as well as interpretation, creation as well as discovery" (Weick, 1995, p. 8). As Sutcliffe (2013) notes, "sensemaking is about the ways people construct what they interpret. Interpretation assumes a frame of meaning is already in place and that one simply needs to connect a new cue to an existing frame. It also assumes that one recognizes a need for the interpretation. Where there is no frame, or where there is no obvious connection between cues and frame and one has to be created, there is sensemaking (Weick, 1995; Weick, Sutcliffe, and Obstfeld, 2005). Consequently, sensemaking is concerned more with invention than with discovery; invention precedes interpretation." Consistent with these scholars, we thus see interpretation as an important component—but only one component—of the sensemaking process.
2. As is common in the sensemaking literature, we use the terms "sense" and "meaning" interchangeably: "meaning" is thus a synonym for understanding, and does not describe something as meaningful, that is, laden with significance, value, or purpose (Oxford English Dictionary).

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